Jewelry from the Iron Age II Levant

Golani, Amir

Abstract: Jewelry has always had an irresistible allure yet in the past also had a significance and function within society that went far beyond ornamentation. Jewelry is an important, if often forgotten facet of material culture. Its study is inter-disciplinary, involving archaeology, anthropology, art history, historical/textual studies, and research of materials and manufacturing techniques. While the renowned jewelry from regions such as Egypt and Mesopotamia has been studied, that of the southern Levant has received only limited attention, yet research of its archaeological/contextual, technological and socio-cultural perspectives is illuminating. The book is a final publication of the author's doctoral dissertation made available to the archaeological and academic community at large. It is geared to be a working tool for archaeologists dealing in this period and region and to scholars who study its arts and crafts. The book provides a handy typological structure for jewelry classification as well as a comprehensive andf useful catalogue for research in this and related fields. In addition, it illustrates the significance, meaning and functions of jewelry and the development of the jeweler's craft in the southern Levant during the first and second millennia BCE.

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Dr. Golani has published numerous jewelry assemblages and co-authored several articles concerning ancient jewelry studies (see bibliography). Other publications include excavation reports on Qiryat Ata (IAA Reports 18, 2003), Ashqelon Afridar, Area E (*'Atiqot* 45, 2004, 9-120), Tel Burga in the Sharon Plain (*'Atiqot* 68, 2011, 69-98), and soon to be published, *The Early Bronze Age I Site of Ashqelon Barnea* – Vol. I, *The Site and Excavations, Vol. II, The Finds* (Monograph, IAA Reports).

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For Olga

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The following could not have been completed without the cooperation of all.

Abbreviations

AA	Acta Archeologica
AAA	Athens Annals of Archaeology
AASOR	Annual of the American Schools of Oriental Research
ABD	Anchor Bible Dictionary
ABSA	Annual of the British School at Athens
ADAJ	Annual of the Department of Antiquities of Jordan
AHL	Archaeology and History in Lebanon
AJA	American Journal of Archaeology
AK	Antike Kunst
ARA	Annual Review of Anthropology
AS	Anatolian Studies
ASAE	Annales du Service des Antiquités de l'Égypte
ASOR	American Schools of Oriental Research
'Atiqot (ES)	*'Atiqot* English Series
'Atiqot (HS)	*'Atiqot* Hebrew Series
AUSS	Andrews University Seminary Studies
BA	Biblical Archaeologist
BAR	Biblical Archaeology Review
BAR Int. S.	British Archaeological Reports, International Series
BAAL	Bulletin d'Archéologie et d'Architecture Libanaises
BASOR	Bulletin of the American School for Oriental Research
BCH	Bulletin de Correspondence Hellénique
BCSMS	Bulletin of the Canadian Society for Mesopotamian Studies
BIA	Bulletin of the Institute of Archaeology (London University)
BSAE	British School of Archaeology in Egypt
BSE	Bulletin de la Société d'Égyptologie
CA	Current Anthropology
CAH	Cambridge Ancient History
CAJ	Cambridge Archaeological Journal
CRAI	Comptes-Rendus de l'Académie des Inscriptions et Belles-Lettres
EI	Eretz Israel
ESI	Excavations and Surveys in Israel
GB	Gold Bulletin
HA-ESI	Hadashot Arkheologiyot-Excavations and Surveys (Electronic Newsletter)
HM	Historical Metallurgy
IA	Iranica Antiqua
IAA	Israel Antiquities Authority
IEJ	Israel Exploration Journal
IMJ	Israel Museum Journal
IMN	The Israel Museum News
JAOS	Journal of the American Oriental Society
JARCE	Journal of the American Research Center in Egypt
JAS	Journal of Archaeological Science
JEA	The Journal of Egyptian Archaeology
JESHO	Journal of the Economic and Social History of the Orient
JFA	Journal of Field Archaeology
JGS	Journal of Glass Studies
JHS	Journal of Hellenic Studies
JIPS	Journal of the Israel Prehistoric Society
JMA	Journal of Mediterranean Archaeology
JNES	Journal of Near Eastern Studies
JSOT	Journal for the Study of the Old Testament
JSP	Judea and Samaria Publications
MASCA	Museum Applied Science Center for Archaeology
NEA	Near Eastern Archaeology
NEAEHL	New Encyclopedia of Archaeological Excavations in the Holy Land
NH	Natural History
OA	Opuscula Atheniensia
OBO	Orbis Biblicus et Orientalis
OJA	Oxford Journal of Archaeology
OIP	Oriental Institute Publications
PEFA	Palestine Exploration Fund Annual
PEFQS	Palestine Exploration Fund Quarterly Statement
PEQ	Palestine Exploration Quarterly
PNAS	Proceedings of the National Academy of Sciences
QDAP	Quarterly of the Department of Antiquities of Palestine
RA	Revue d'Assyriologie et d'Archéologie Orientale
RAVA	Reallexikon der Assyriologie und Vorderasiatischen Archäologie
RB	Revue Biblique
RDAC	Reports of the Department of Antiquities of Cyprus
RN	Revue Numismatique
SMS	Syro-Mesopotamian Studies
TA	Tel Aviv
UF	Ugarit-Forschungen
UM	University Museum, Philadelphia
VT	Vetus Testamentum
WA	World Archaeology
ZA	Zeitschrift für Assyriologie und Vorderasiatische Archäologie
ZDPV	Zeitschrift des Deutschen Palästina-Vereins

Introduction

Jewelry is one of a broad range of material culture objects that may be recovered during excavation. In contrast to more commonly found ceramics, which underwent continuous stylistic and technological changes over time, ancient jewelry was more conservative in nature, often retaining stylistic and technological characteristics for centuries or even millennia. It is thus understandable why archaeological research has concentrated more effort on ceramic classification than on jewelry typology, as the latter does not provide an effective tool for chronological dating. Nevertheless, jewelry is an important part of the evidence from the past that sheds light on a broad spectrum of subjects, ranging from changing socio-economic and political processes to sophisticated technologies and cultic beliefs.

With its unique position as a land-bridge between Africa and Western Asia, the southern Levant has, from time immemorial, been the meeting place and clashing point of various empires and cultures. The kingdoms of Israel, Judah, Moab, Ammon and Edom, the city states of the Philistines and other Sea Peoples, as well as the 'Phoenicians' inhabiting the Levantine coastal regions, all interacted in this area during the Iron Age. The southern Levant was always influenced to some degree by its neighbors, which included Egypt to the southwest, Greece to the west, Assyria and Babylonia to the east, and the Iron Age Luwian and Aramean city-states of northern Syria and southeastern Turkey to the north. While the jewelry from some of these regions has occasionally been the subject of previous studies, that of the southern Levant has received very limited attention.

Though this work focuses on the Iron Age II in the southern Levant, the inherent conservatism of jewelry makes this study relevant for other periods as well. Iron II jewelry was the product of typological and technological developments that took place during the preceding Bronze and Iron I periods and formed the basis for the jeweler's craft during the subsequent Persian period. Therefore, Iron II jewelry should be viewed as one stage in an evolutionary continuum. While the Iron Age II in the southern Levant is the primary focus of this study, a broad geographical and chronological perspective that includes neighboring lands as well as earlier and later periods is necessary to provide a comprehensive understanding of the subject. As a result, some parts of this study are dedicated to aspects relating to the jewelry of the Late Bronze Age, Iron I and the Persian period. The jewelry from neighboring lands such as Egypt, Neo-Assyria and Greece is referred to whenever relevant.

The chronological time frame of this study is the Iron Age II (modified conventional dating 950–586 BCE).[1] The specific chronology of the Iron Age I–Iron Age II transition is the subject of modern scholarly debate (see Gilboa and Sharon 2003; Mazar 2005; 2008; Finkelstein 2005; 2009). This study follows the high chronology (*modified conventional dating*) that has determined the beginning of the Iron Age II to the middle of the 10th century (Mazar 2008).[2] However, in contrast to ceramic assemblages, the chronological range of a jewelry type is usually of little use as a critical parameter to refine dating. This is due to the above-noted conservative nature of jewelry's stylistic and technological characteristics, as well as to the fact that precious objects such as jewelry may be kept for centuries as heirlooms. Thus, the present study cannot and does not attempt to contribute to the Iron Age chronological debate.

As used in this work, the term 'southern Levant' refers to the area of modern-day Israel, Jordan and the Palestinian Authority.[3] For clarity, jewelry made and found in this vicinity is termed 'local' when discussed in relation to other regions such as Egypt, Assyria and Greece. The bulk of the jewelry used in this study was recovered from the southern Levant and represents a compilation of the published and unpublished objects that were available for study. In addition, this study also includes as much published data that could be gathered from Jordan and Lebanon.

The impetus for this research is the lack of an effective and comprehensive means by which to categorise, study and understand jewelry as a significant element of material culture. Thus, *the primary purpose of this study is the collation and formulation of a typology to better understand the development, significance and function of ancient jewelry.* The typology created in this study aims to be an effective and useful tool in the classification and understanding of Iron Age II jewelry and has two major goals:

1) To create a detailed classification that organizes jewelry items into general categories based on their supposed function, e.g., earrings, small and large rings, pendants and beads. These are further sub-divided according to specific form and/or the material from which they were made, i.e., metal, stone, siliceous materials (glass, faience), terracotta, bone/ivory and shell. This system defines nearly all the jewelry types found during the Iron Age II in the southern Levant and enables each type to be studied separately or as part of the whole. This typology facilitates the

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1 See Mazar 2008.Unless indicated otherwise, throughout this work all dates are BCE.

2 In a more recent article (Finkelstein 2009), the lower chronology has also been slightly raised so that both chronologies are now drawing closer to the mid-10th century for the end of the Iron Age I and the beginning of the Iron Age II.

3 The southwestern end of the 'Fertile Crescent' is often referred to in the literature as the 'southern Levant', a term commonly used in the literature to avoid taking a geo-political stance.

classification of a large number of types and their variants and is flexible enough to be expanded as new forms are discovered and studied.

2) To establish a relationship between the type of object and the material and technique by which it was made. The various materials naturally lend themselves to certain forms and uses according to the inherent qualities of each material (processing techniques and durability).What is possible in stone, for example, cannot always be achieved in metal, glass or faience.

The typology includes a discussion of each general jewelry category and then each specific type, elaborating on chronological, cultural, stylistic and technological development as well as iconographical significance, if any. When a certain type bears cultural and/or chronological significance, a table provides contextual details and references to all examples originating in the southern Levant. It should be noted that the present study does not include fibulae, toggle pins, scarabs, seals, or Egyptian-style amulets, although they are also a type of ornamentation.

Outline

The study is divided into two major portions. Part I is a comprehensive synthesis comprising a general review of the development, significance and function of jewelry and the evolution of the jeweler's craft in the southern Levant during the Iron Age II (Chapters 1–5). Part II includes the typological database and its analysis.

Part I

Chapter 1 introduces the *archaeological and cultural context* of Iron Age II jewelry in the Southern Levant. Previous research concerning ancient jewelry is reviewed, focusing on evaluation of the context. The archaeological context of jewelry objects is examined, while taking into consideration the meaning and significance of their find spots, e.g., whether they were found as single items in occupational strata, in hoards, in foundation deposits or in tombs as offerings. The specific contextual and chronological data concerning the items in this study is found in Part II, where the information for each item is conveniently presented in table form. The cultural context analyzes how jewelry was used and its significance, while considering how it was worn, by whom and for what purpose. Insight is gained through examination of iconographic representations such as figurines and statuettes, pictorial renditions and in-situ funerary finds. The cultural context of specific jewelry categories such as earrings, small and large rings, pendants and beads is dealt with separately in Part II.

Chapter 2 deals with *the materials and techniques of jewelry manufacture* and provides a necessary background for understanding and appraising the jeweler's craft. The relationship between material and form is investigated, the types of materials and their sources during the Iron Age II are examined, while the processing techniques employed for each material are described and analysed. The origin and relative frequencies of the raw materials used in jewelry indicate changing trade contacts and help to assess the development of trade patterns and economic forces during the Iron Age II. The specific choice of materials may also have had religious or cultic significance, a subject dealt with in more detail in Chapter 4. The identification of jewelry workshops is also appraised alongside the role of craftsmen in the manufacturing process and their position in society.

Chapter 3 evaluates the *various cultural traditions* found in the local Iron Age II jewelry repertoire. As an element of material culture, jewelry is one of the indicators of the impact, adoption and assimilation of cultural traits. These may be found in stylistic and iconographical elements as well as in the materials and technology. Minor arts such as jewelry function as media reflecting inter-cultural exchange through trade, growing or waning political and economic influence, conquest and the movement of populations or artisans, making jewelry particularly relevant to the study of inter-cultural contacts.

The cultural influences are divided between *foreign contacts* and *local styles*. The foreign traditions originate in Egypt, North Syria (Luwia/Aram), Neo-Assyria/Babylonia as well as Greece, the Aegean basin and Cyprus. The local traditions can be related to identifiable cultural groups in the southern Levant, chief among them the Canaanites and Phoenicians, but also the Israelites/Judeans. As jewelry items often have a religious or socio-cultural affiliation, types showing specific stylistic and technological characteristics found within a defined geographical region and chronological time-span, may thus be identified as cultural markers representing one or another cultural group.

Chapter 4 examines the *significance of jewelry* in the southern Levant during the Iron Age II, which is best defined in its *social, religious and economic contexts*, all three of which are interrelated. Within the social realm, jewelry is examined in terms of its function in self-expression and gender determination, as a measure of wealth and social status, as a sign of rank and office and as a cultural or ethnic marker. The symbolic, cultic and amuletic significance of jewelry defines its religious function. In addition, the economic function of jewelry is investigated through its role in commerce.

Chapter 5 summarizes the main conclusions arising from Chapters 1–4 and the typological analysis in Part II. These all define the significance, function, typology and technological development of jewelry and the jeweler's craft during the Iron Age II as part of a continuum from the Bronze Age through the Iron and Persian periods in the southern Levant.

Part II

Part II comprises the database of the research and is arranged according to the typological scheme described above. The database includes published and numerous as-yet unpublished jewelry objects. Wherever possible, the dating of published items originating in excavations of the early 20th century has been updated and revised.

While constituting the bulk of the raw data upon which the present research is based, the jewelry typology is also designed to be used as a convenient handbook to compare, classify, date and understand the jewelry of this period that has already been found or will be unearthed in the future, and may hopefully provide a useful tool for future research.

Part I
Archaeological and Socio-Historical Aspects

Chapter 1
The Context of Iron Age II Jewelry in the Southern Levant

The context of archaeological finds in general and that of jewelry in particular is no less important than the actual object itself, and it goes without saying that an item lacking archaeological context has diminished scientific value.[4] Iron Age jewelry should be examined from two perspectives: the *archaeological context* and the *cultural context.* The archaeological context is concerned with the specific find spot of the object and its relationship to other objects found with it that can shed light on its date and *raison d'être* in the specific place in which it was uncovered.[5] In addition, the more general spatial archaeological context should be taken into account (e.g., within a building or a tomb), the character of the area in which it was found (e.g., a residential or elite quarter or a necropolis), and the site itself (e.g., village or urban center). The cultural context determines how jewelry was used within a society. This may be understood through visual representations of jewelry as well as in-situ finds of jewelry in burials, which illustrate what kinds of jewelry were worn, how they were worn and by whom.

1.1. Previous Research and Evaluation of Context

As opposed to other components of material culture, the archeological context of jewelry has received relatively limited attention. Research of ancient jewelry has usually been 'object driven', studied through the eyes of the art historian and generally detached from its archeological milieu (Rudolph 1996b: 17). Most excavation reports still relegate jewelry objects to the general category of 'small finds' or 'minor arts', with little or no discussion concerning their context, materials, technology or significance.

Though treasure-seeking motives have sparked interest in ancient jewelry, and still do so, scientific archaeological research of ancient jewelry began during the 18th century CE with the excavations at Pompeii and Herculaneum. Treasure seeking was also the main motive for the profitable and fashionable pastime of 'excavation' that befell Cyprus during the second half of the 19th century CE by various foreign consuls and other officials, when thousands of tombs and occupational sites were robbed for profit (Goring 1988). Jewelry thus made its way to dealers and private collections of antiquarians and to various museums. Research of ancient jewelry during the 19th and the beginning of the 20th centuries CE made use of amassed collections and museum catalogues (e.g. Cesnola 1877; Myres 1899; de Ridder 1911; Marshall 1911; Williams 1924; Rudolph 1996b). Special types of jewelry, such as finger rings, were sometimes treated separately (Marshall 1907), though most publications concerned themselves primarily with the more outstanding jewelry objects and less impressive items were generally overlooked.[6] Objects in museum collections were nearly always isolated from their archaeological context and little or no attention was given to their cultural context.

With the onset of systematic archaeological expeditions in the first half of the 20th century CE, jewelry was usually published within excavation reports that provided a bare minimum of information with little regard for archaeological context (e.g., Macalister 1912a–c [Gezer]; Petrie 1930 [Tell el-Farʿah (S)]; 1932 [Tell el-ʿAjjul]; Woolley 1934 [Ur]; Guy and Engberg 1938; Lamon and Shipton 1939; Loud 1948 [Megiddo]; Rowe 1940 [Tel Beth-Shean]). A notable exception was C. Densmore Curtis's volume devoted specifically to the jewelry from Sardis in western Asia Minor (Densmore Curtis 1925).

The first work that attempted a typological study was K. Hadaczek's work on Greek and Etruscan earrings (Hadaczek 1903). Beck's (1928) pioneering work on beads and pendants recognized the need for a comprehensive and useful typology and nomenclature, though his work was based on examples from different periods and disparate regions. A further attempt at the classification of beads was carried out by Starkey (1930), in dealing with the wealth of beads and pendants from Beth Pelet (Tell el-Farʿah (S). The Marston-Wellcome expedition to Lachish (Tell ed-Duweir) revealed quantities of Bronze and Iron Age jewelry from the Fosse Temple and tombs

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4 The scholarly value of a jewelry object severed from its archeological context is limited, as we do not know its relationship to other aspects of material culture. The lack of trustworthy contextual data for objects not originating in controlled scientific archaeological excavations, such as those looted from sites and sold on the antiquities market, will also raise doubts as to their authenticity.
In this study, an effort has been made to deal primarily with provenienced finds originating from controlled archaeological excavations. However, exceptions have been made in cases when a scholarly publication deals with items revealed by other means, such as two hoards of silver jewelry from Jordan (Kraay and Moorey 1968).

5 For inclusive discussions concerning the importance of archaeological contexts, including the formation and decomposition processes that affect them, see Schiffer 1972; Rudolph 1996a; Renfrew and Bahn 2004: 41-60. For more on the formation processes of archeological sites, see Wildesen 1982.

6 Jewelry in museums more often than not represents the height of achievement by the artisan, which was worn by a noble few, and is therefore not always representative of the types of items worn on a daily basis.

(Tufnell, Inge and Harding 1940: pls. 14; 26, 34–36); Tufnell 1953: pls. 54–57, 63, 66–67; 1958: pls. 25, 27, 29) and though the jewelry was accorded limited attention, these publications were among the first to provide a full and inclusive presentation of all the various *types* of jewelry from an excavation. Information on the archaeological context of items from these excavations can be gained by tracking the loci from which they originated in other parts of the excavation report, often a difficult, time-consuming and frustrating task. Little or no attempt was made to deal with the archaeological or cultural context of these finds.[7]

The second half of the 20th century CE witnessed a more comprehensive approach to the study of ancient jewelry from large geographical regions and recognized the necessity to understand the jeweler's craft. Higgins's (1961) publication of Greek and Roman jewelry adopted a chronological approach, tracing the development of jewelry production in the Greek and Roman world from prehistoric times. A number of studies published in the same year, including Wilkinson's (1971) and Aldred's (1971) books on ancient Egyptian jewelry and Maxwell-Hyslop's (1971) work on Western Asiatic jewelry, are similarly structured. Most of these works include general discussions concerning materials and manufacturing techniques. However, all three treatises fail to link the jewelry with its archaeological and cultural context, dealing primarily with the more outstanding examples. While these items reveal a measure of cultural sophistication, they are not necessarily the more common expressions of the jeweler's craft.

Maxwell-Hyslop's (1971) book was the first study to focus on jewelry of the southern Levant itself within a broader framework of the ancient Near East, although this work did not deal either with the archaeological or the cultural context of the jewelry. However, Maxwell-Hyslop did recognize the importance of archaeological and cultural context when she wrote:

"An intelligent study of the jewellery should be based not only on the different types, their variations, technique and purpose, but also on the associated objects [with], which they were found. [The] words of Sir Leonard Woolley can be applied to most types of jewellery: It is more correct to date the fashions in beads by the graves in which they are found than to date the graves by the beads" (1971: 3).

In the 1980's and 90's, research into ancient jewelry developed a more typological and less chronological approach, finally taking into account the archaeological context along with an expanded and in-depth treatment of the jeweler's craft. *Jewelry of the Ancient World* (Ogden 1982) and *Ancient Egyptian Jewellery* (Andrews 1990) both begin with a thorough review of materials and techniques and continue with a broad survey of different kinds of jewelry. Musche's (1992) book on western Asiatic jewelry from the Natufian to the Achaemenid periods of the Levant still adopted a chronological approach, yet also tried to create an inclusive typology for classification. Jewelry from large-scale excavations such as Tell el-ʿAjjul (Negbi 1970), Carthage in Tunisia (Quillard 1979; 1987), Tharros in Sardinia (Pisano 1987), Amathus in Cyprus (Laffineur 1992) and more recently Tel Miqne-Ekron (Golani 1996a; forthcoming A) and Mari in Syria (Nicolini 2010), was extensively researched and catalogued, and typologies were created for its classification.

At the same time, the need for regional typological studies geared at understanding jewelry's cultural significance and function in ancient society was finally recognized. For example, jewelry from Bronze Age tombs in Greece was studied by Konstantinidi (2001) with the aim of expanding our knowledge of everyday life and social structure through the evidence that jewelry can provide, and a similar study was carried out on Minoan jewelry by Effinger (1996).

Research into ancient jewelry of the southern Levant itself has generally been limited to special items or groups of outstanding objects (e.g, Negbi 1970; Platt 1976; 1978; Tadmor and Misch-Brandl 1980; Ogden 1995; Golani and Sass 1998), but examination of jewelry in a comprehensive manner that would address its cultural context was generally lacking. With the advent of gender-oriented studies that incorporate anthropological models, attention was drawn to specific types of jewelry objects such as anklets, revealing intriguing aspects as to their social significance and function (Brody and Friedman 2007; Green 2007). However, in most cases, attention was given to the archaeological and cultural significance of jewelry only when an unusual or special object was found, usually in an unexpected context (e.g., Maxwell-Hyslop 1978; Shea and Maxwell-Hyslop 1979; 1985), or when the jewelry had added significance or value due to its association with objects within a specific findspot such as a repository or a hoard (e.g., Negbi 1970; Barkay 1986; Golani and Sass 1998; Gitin and Golani 2001; Sass 2002). The encyclopedic summaries of jewelry in the southern Levant and its development (Rosenthal 1982; Platt 1992; Sass 1997; 2007) give a broad, though partial overview of jewelry's cultural context in the Bronze and Iron Ages. McGovern's (1985) work on Late Bronze Age pendants created a detailed typology for this specific category and attempted to analyze their significance and use in Late Bronze Age Canaanite society. Spaer's (2001) volume on glass beads and other small objects from the collections of the Israel Museum provided a detailed catalogue and a discussion con-

[7] A minor exception to this are Macalister's (1912b; 1912c) publications of Gezer, in which are found observations regarding local superstitions and how they pertain to the jewelry uncovered in his excavations.

cerning the development of ancient glass technology. However, as many of the objects originate from collections, the archaeological and cultural context of these finds was not addressed.

The first attempt to deal with types of Iron Age jewelry from the southern Levant and their context in a comprehensive manner was carried out in E. Platt's (1972) Ph.D. dissertation: *Palestinian Iron Age Jewelry from Fourteen Excavations*. According to Platt (1972: XIII) the study aimed at: "begin[ning] a comprehensive collection of ancient jewelry from a limited geographical region at a specific period of time to be used as a tool for archaeology".

The material used in her study was drawn from fourteen sites, the majority excavated between the two world wars. The excavation reports are out-dated and suffer from a non-standardized and incomplete presentation of the data. From this rather inadequate database, Platt sought to: "delineate the general jewelry categories, [identifying] the various forms within the types…[and then] to place the objects with the finds associated to them … in the contexts where they were discovered…[in order to create] a kind of catalogue which can be an important reference for the archaeologist, and very secondarily, a primary resource for the historian" (1972: XIV–XV).

This pioneering thesis on Iron Age jewelry of the southern Levant attempted to produce a useful tool for archeological research. However, a large portion of this work is devoted to descriptions of the jewelry and associated finds at each site, much less to any form of typological classification, definition of jewelry types, or chronological discussion of the jewelry and its development and significance in Iron Age society. In addition, some of the more common types of jewelry, such as beads and amulets, are not dealt with at all.

The author's (1996a) M.A. thesis on the corpus of Iron Age jewelry from Tel Miqne-Ekron adopted a typological approach to create an inclusive classification for jewelry and dealt with the archaeological and cultural contexts in which it was found. However, as it was based on a single site, this work could not present the full range and significance of jewelry throughout the Iron Age II.

Limmer's more recent dissertation (2007) on the social and ritual significance of jewelry dealt with the Iron Age IIB–C (approx. 850–580 BCE), focusing exclusively on the jewelry found in Cisjordan and its relation to the Biblical texts. This study attempted to determine the social functions of jewelry in Israel and Judah during the Iron Age. Similar to Platt's work, this study also limited itself to a handful of sites, yet includes a database of approximately 4500 objects, 78% of which are beads (Limmer 2007: 250). The bulk of the data was culled from tombs, such as those from Lachish (81% of the data), many of which are of mixed date. This work also employed anthropological theory to define the social functions of jewelry by examining such characteristics as color, deemed essential in the choice of material, along with the color terminology used in the Old Testament.

A major drawback of Limmer's work is that Iron Age II jewelry from Israel and Judah alone is limited in amount and variety. The ubiquitous Judean pillar figurines (see Kletter 1996), hardly bear any depictions of jewelry, therefore the manner in which the ancient Israelites and Judahites wore and used jewelry and its social significance is much less clear than it is in neighboring cultures and chronological periods, from which numerous iconographic representations of jewelry are known (see below).

More recently, Ben Basat has researched a large collection of beads and pendants from the early Iron Age (Iron Age I) levels at Tel Dor (2011). Using Beck's (1928) typological apparartus, Ben Basat's comparative study amassed a very large database of beads from early Iron Age sites in the southern Levant. Using quantitative analysis, Ben Basat was able to evaluate changing patterns of material use over time and regional differences in bead use as well. An additional quantitative study of the Iron Age II beads from the Phoenician necropolis at Akhziv (Shifris 2010) sought to characterize Phoenician bead assemblages, and sought to distinguish them from bead assemblages of other cultural entities of Iron Age II in the southern Levant.

1.2. Archaeological Context: How is Jewelry Found in Archeological Excavations?

Jewelry items are small and mobile and may be found in a wide variety of archaeological contexts. Rudolph has made a distinction between *controlled context*, for which full documentation exists, *generic context*, for which the specific region of the find is established without a doubt though it did not originate from controlled excavations, and *no context*, when no information about the object is known, rendering it's authenticity suspect (Rudolph 1996a: 15–16). Controlled context is important for relative chronological dating, by association of the object to other datable artifacts such as ceramics, or in later periods, coins. Without associated datable finds, we must resort to comparison with well-dated parallels to establish a date. However, dating according to associated objects does have its pitfalls, as heirlooms such as jewelry may be passed down for generations. This implies admiration or even superstition regarding the symbolism, aesthetic beauty and antiquity of an item.[8]

[8] For example, the Egyptian King Sheshonq II of the 9th century was buried with jewelry that included a gold bracelet designed to hold a Mesopotamian lapis lazuli seal, at the time already over a thousand years old (Ogden 1992: 9).

The question that arises following the discovery of an object in a controlled context is: why was this object found where it was found? To answer this question, we must take into account all aspects of the archeological context, or as termed by Rudolph "the context of physical setting" (1996a: 15). This includes the general context of the site, such as its location, character and history, the specific context of the object, such as its spatial location within the site, its association with architecture and other finds, as well as the post-depositional processes involved in the formation of the site after the object had been lost, discarded or purposefully buried. While these are the most tangible aspects of context, they are also the most deceptive, as they are prone to subjective interpretation of the often-incomplete data.

In the archaeological record, jewelry, like most finds, will always be represented in an incomplete manner, as its survival is dependant on the materials from which it was made and the degree to which these materials deteriorate within their depositional environment. As an example, jewelry made of organic materials such as wood is practically non-existent in the archaeological record. In addition, finding jewelry is often dependent on the excavation methods themselves (i.e., sieving) and the context in which it was found. These are some of the reasons that contexts such as tombs, hoards and foundation deposits are one of the richest sources, while jewelry items from settlements are generally more sporadic.

1.2.1. Stratigraphic Context: Isolated Items in Occupational Strata

The manner in which an object is found in association with other objects is its stratigraphic context. Objects from a single-stratum site or a tomb used in a single period may be considered as originating in a secure stratigraphic context. In contrast, objects found upon the modern ground surface or acquired in the antiquities market, for example, lack any association with other finds and are said to be of non-stratigraphic context. Most objects from archaeological excavations are found within the vast range of possibilities that exist between these two extremes. In a study of the small finds from the City of David excavations in Jerusalem, 25% of the small finds were considered to have originated in a 'good' stratigraphic context, while the remaining 75% percent were of questionable context (Zuckerman 1996: 276–278).

The precise stratigraphic attribution of small objects such as jewelry is often difficult, as small objects tend to be more 'mobile' than larger artifacts and therefore more likely to be displaced from their original context by natural phenomena or man-made disturbances (Adkins and Perry 1989). A critical examination of the specific context of each item is therefore necessary to determine its stratigraphical assignment and date. In most publications, the data is insufficient. This highlights the importance of sites from which the available documentation enables a rigorous examination of stratigraphic detail. Such a critical study was carried out on the jewelry from Tel Miqne-Ekron (see Golani 1996a),[9] and from Tel Ashdod Areas H and K (Golani and Ben-Shlomo 2005),[10] thus establishing these corpora as credible databases by which other jewelry objects of unclear or dubious context may be dated.[11]

The discovery of isolated items of jewelry during excavation is often dependent on the degree to which sieving was undertaken and what size mesh was used. At a settlement site, jewelry objects may originate in a wide variety of archaeological contexts, such as topsoil, fills, debris buildup, destruction debris, pits, foundation trenches, walls, floors and surfaces. The reason small objects find their way into such contexts is because they were either accidentally lost in the past, or were detached from their original context by post-depositional processes. Thus, the random variety of such isolated finds may be the best, though rather vague, reflection of the kinds of jewelry worn on a day-to-day basis in the past.

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[9] In this study, the author follows the dating of the excavators of Tel Miqne-Ekron (see Gitin 2003). However, for a different chronological attribution and historical interpretation, see Stager 1996; Andaman 2002; Ussishkin 2005.
Of the 1086 stratified jewelry objects recovered from excavations at this site, 814 were attributed to Iron Age II (Strata I–IV), and of these, 693 may be assigned to secure stratigraphic contexts. The large number of items from secure contexts is due to their origin in sealed assemblages or hoards (see Golani and Sass 1998; Gitin and Golani 2001).

[10] For the purposes of this study, the author accepts the dating of the excavators (Dothan and Ben-Shlomo 2005: 9). For a different interpretation of the Ashdod stratigraphy, see Finkelstein and Singer-Avitz (2001) and a response by Ben-Shlomo (2003). The Iron Age II Tel Ashdod jewelry assemblage from Areas H and K comprises only 33 of the 449 stratified items that originated in Iron Age strata and of these, only three objects are assigned to a 'Grade A' secure stratigraphical context (Golani and Ben-Shlomo 2005: 247, Table 4.3). The majority of the jewelry from Areas H and K, especially the large number of items (337) from Building 5337 of Stratum XII, date are associated with the Iron Age I (see Golani and Ben-Shlomo 2005).

[11] An analysis of the specific context of each object from Tel Miqne-Ekron and Tel Ashdod Areas H and K was made by reference to sections, plans, photos and field notes for each bucket from which jewelry was recovered. Accordingly, a critical apparatus was designed to indicate the degree of certainty of each object's stratigraphic and chronological assignment (see Golani 1996a: 19, Chapter II n. 4). This apparatus was based in part on the procedures for determining secure loci as established at Tel Gezer (Gitin 1990: 37-41). Use of a critical apparatus at other sites is strongly recommended for determining a more precise, and hence a more reliable, stratigraphic and chronological assigment for small objects.

Objects recovered upon a habitational surface may be regarded as associated with that surface at the time it was in use; however, in the case of jewelry, this rarely occurs, except in cases of violent destruction not followed by plundering. An example is the Iron Age II destruction layer at Hasanlu in Iran (Marcus 1993: 159), in which bodies adorned with jewelry were buried by destruction debris. As items of jewelry were made of valuable materials that often remained in use over long periods of time and could be re-used to fashion other objects, they were rarely discarded. Thus, jewelry is most often recovered in tombs, hoards, foundation deposits or temple offerings and is not necessarily the most accurate reflection of the types of jewelry used in daily life.

The type of site in which a jewelry item is found is also important. Jewelry associated with rural sites is usually of poorer materials, less ostentatious and of more limited variety than that recovered from large urban centers where social stratification and wealth were more common and craftsmen (silver- and goldsmiths, lapidaries and jewelers in general) were concentrated.[12] Within a site, attention should be given to the specific context of an object. Items indicating wealth and social status are usually recovered within or near public buildings and represent concentrations of wealth.[13]

1.2.2. Tombs

The largest amount of jewelry available for study, and certainly most of the better-preserved pieces,[14] originates from tombs, as jewelry was a standard offering in all burial types throughout the Iron Age (Bloch-Smith 1992: 81). In contrast to single and isolated finds, jewelry in tombs was purposefully placed there to adorn the dead as part of the burial rites. In Egypt and Mesopotamia, far more jewelry was expressly made for the day of burial itself than for everyday wear, as religious beliefs dictated that offerings to the dead accompany them into the afterlife. In ancient Egypt, certain types of jewelry, as well as their materials and placement in the tomb, were specified for burials. Thus, some items found in tombs would never have been used in daily life.[15] Such funerary jewelry may be identified by its pristine condition, its fragile mode of construction (using, for example, thin gold foil instead of sheet) and its nearly exclusive occurrence in tombs (e.g. Williams 1924; Wilkinson 1971; Andrews 1990; Pittman 1998).

The corpus of Iron Age II funerary jewelry in the southern Levant is far more modest than that of Egypt and Mesopotamia and there is hardly any specific item that may be regarded as funerary in origin or intent (Sass 1997: 239). Similarly, a study of Bronze Age jewelry from Greece (Konstantinidi 2001) does not indicate any specific form designed for use in burials as opposed to everyday life; the jewelry chosen to accompany the dead was often the same as that worn in life.

When the burials within a tomb represent interments from one period only, the jewelry may be associated with that period, and the chronological assignation of the object is relatively secure.[16] However, tombs were often reused and may include mixed finds from various periods, especially when the latest burial phase pushed the previous remains to one side, such as in a repository (e.g., in Tomb 25 at Ketef Hinnom, see Barkay 1986). Without great care and meticulous documentation, it is very difficult if not impossible to assign small finds to a specific burial phase, unless there are well-dated and securely associated parallels to draw upon.[17] It must be emphasized, of course, that

12 In the author's review of numerous excavated rural and village sites of the Bronze, Iron and Persian periods, very few jewelry objects were found associated with habitational levels. Those found are generally of a very simple nature, such as beads, pendants of common, non-precious stone and simple metal jewelry made of copper alloy. In contrast, a much wider variety of jewelry, including items of precious metals, is found at urban centers and in their cemeteries. In addition, molds for the casting of jewelry objects, a clear indication of jewelry manufacture (see below, Chapter 2, n. 43), have been found only in association with larger urban centers.

13 At Iron Age Tel Miqne-Ekron, the majority of the jewelry objects and silver jewelry hoards (see Golani and Sass 1998; Gitin and Golani 2001) were recovered in the central portion of the site (Field IV), regarded as the 'elite' zone where the temple and palace were located, and on the acropolis of the site (Field I) where massive public buildings appear to have been erected (Gitin 1989; 1992; 1995; 1997). At Tel Ashdod, the majority of the jewelry objects originated in Building 5337, a large multi-roomed structure of an elite nature that apparently belonged to a prosperous Philistine family (Mazar and Ben-Shlomo 2005: 26-30).

14 Jewelry in tombs is often better preserved than that originating in habitational layers simply because once interred, it is less subject to artificial or natural disturbances that tend to hasten the disintegration of most objects.

15 This is especially true of Egyptian funerary jewelry (see Andrews 1990: 187-197). The Egyptian Book of the Dead specifically prescribed certain jewelry pieces, while even their materials and positioning on the body were often stipulated. Such jewelry was made specifically for burial and some pieces of non-amuletic nature were also constructed of cheap or fragile materials that were not intended to withstand normal wear and tear.

16 In Part II, jewelry items originating from single-period burials have been noted.

17 In such cases, dated parallels from other sites can also serve to restrict the chronological range of an artifact. For example, the date of the large Iron Age silver hoard from Eshtemoʻa (Yeivin 1990), excavated in an unclear chronological context, has been the subject of some debate (Kletter and Brand 1998; Thompson 2002: 98). However, the hoard contains several earrings of very specific typological form and technological construction (Hollow Lunate Earring Type VII.1, see Fig. 14: 6-10), which are closely paralleled in another jewelry hoard securely dated to the 10th–9th centuries from Ein Hofez (Y. Alexandre, unpublished). This suggests that a 10th–9th century date for some of the items from the Eshtemoʻa hoard is more likely than an 8th century date (*contra* Kletter and Brand 1998). However, these items may have also been heirlooms that had been hoarded for an extended period.

since jewelry items were objects of value, they may have been handed down as heirlooms through several generations (Chin 1988: 60–61).[18]

1.2.3. Hoards

A hoard is a hidden or stored collection of precious objects whose owners, for some reason or other, never returned to claim them (e.g., Knapp, Muhly and Muhly 1988; Philip 1988).[19] Such caches may be seen as closed groups or assemblages of jewelry. Having been purposefully buried or hidden for security, most hoards derive from secure and well-dated stratigraphic contexts (e.g., Golani and Sass 1998; Gitin and Golani 2001). On the other hand, some hoards, like those from Tawilan (Ogden 1995) or Eshtemoʿa (Yeivin 1990), derive from unclear stratigraphical contexts and are thus dated by the jewelry within them, as at Tawilan, or by the vessels in which they were found and the inscriptions upon them, as in the Eshtemoʿa hoard (Yeivin 1990).[20] As in tombs, some of the jewelry in hoards may have been heirlooms.

Hoards are usually associated with large domestic buildings, temples, palaces or other public buildings).[21] The context, as well as the contents of a hoard, is crucial in determining their nature (Knapp, Muhly and Muhly 1988). They may have served as a personal collection of valuable goods, a public treasury, an offering or a jeweler's stock in trade of raw material, spare parts or products in the making.[22] In at least one instance, a collection of precious Late Bronze Age jewelry appears to have been the hoard of a latter-day thief (Tadmor and Misch-Brandl 1980).

1.2.4. Offerings in Temples and Foundation Deposits

Another type of context in which jewelry is found is that of offerings to a temple or in a foundation deposit. Foundation deposits are "a building deposit placed in the foundations or lower parts of a building – below floor level" (see Ellis 1968: 1; Bjorkman 1994) or "a type of votive offering placed *in* or *beneath* the foundation of a building or in its vicinity at the time of its founding" (Weinstein 1973: lxix). They were purposefully interred without intent of future retrieval.[23] Like hoards, temple offerings and foundation deposits are also manifestations of wealth, although in this context the objects are dedicated or 'sacrificed'. Such collections are defined as offerings or foundation deposits by analysis of their context and contents. They may include a collection of jewelry or jewelry together with other items such as carnelian, lapis lazuli, gold and shells, as found in foundation deposits in Mesopotamia (Ellis 1968: 131ff.), or even single items given as a gift to the gods or priests. Such items were included as offerings not only for their intrinsic value, but also for their cultic/religious, apotropaic and magical properties as well.

1.3. Cultural Context: How was Jewelry Worn and by Whom?

The cultural context of jewelry is an expression of the changing beliefs and fashions of the time. Unfortunately, sources related specifically or exclusively to beliefs and fashions in the Iron Age II in the southern Levant are very limited, and it is necessary to seek data from other periods and neighboring cultures.

Study of jewelry's cultural context may be conducted using textual sources as well as the archaeological evidence itself. Examination of the former is far beyond the scope of this study. Biblical references and Neo-Assyrian records may refer to jewelry items, yet their identification with specific objects recovered in excavations remains a

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18 This is true for any object of precious value and is especially evident in hoards containing precious objects that may have been amassed over the course of many years (see Kraay and Moorey 1968).

19 For a review of Iron Age I–II hoards in Israel, Jordan and Syria, see Kletter 2003; Thompson 2003. For an analysis of late Iron Age II silver hoards throughout the ancient Near East and their significance, see Gitin and Golani 2001; Thompson 2003: 93.

20 See above n. 14.

21 For example, four of the six silver hoards (Hoards 1–3, 6) recovered from Tel Miqne-Ekron were unearthed in the central elite zone of the city (Field IV), within large public buildings, while a fifth hoard (Hoard 4) was associated with a large building on the acropolis (Field I). Hoard 5 is interpreted as a foundation deposit. At least four of these hoards were intentionally concealed. For more on these hoards, see Golani and Sass 1998; Gitin and Golani 2001.

22 For various interpretations of one jewelry collection found in an Iron Age tomb from Crete, see Hoffman 1997: 192-213.

23 See, for example, Hoard 5 from Tel Miqne-Ekron, consisting of cut, damaged and whole jewelry pieces found immediately below a wall associated with Stratum IC-B of the late Iron Age II in Field III (Gitin and Golani 2001: 33), and another hoard from Tel Beth-Shean, consisting of silver pieces, cut pieces of silver jewelry and a gold armlet all wrapped in cloth and buried below a wall of Room no. 1095, one of the 'Late Seti I' rooms north of the temple, dated to Iron Age I (Rowe 1940: 19, pls. 34: 17, 21, 67a: 1-3). From the same site is yet another deposit found in a pot below the floor and next to the central column base of Room no. 1029 of the southern Temple and containing gold and silver pieces as well as jewelry. This collection was defined by the excavators as a foundation deposit from the days of Ramses III (Rowe 1940: 26, pls. 29: 32-44, 66A: 1-2). For a different interpretation, see Vargyas 2007.

challenge that is better dealt with by textual scholars (e.g., Platt 1979a; 1979b; 1992; Rodriguez 1997). The archaeological evidence, on the other hand, shows specifically what jewelry was worn and by whom.

Depictions of jewelry on figurines and statuettes in the southern Levant may be supplemented by Neo-Assyrian, Syrian, Egyptian and Aegean pictorial representations[24] and in-situ jewelry finds discovered on skeletons. The jewelry of these cultures is beyond the scope of this study, though they are referred to when relevant in order to understand the background of jewelry use during the Iron Age II in the southern Levant.

1.3.1. Anthropomorphic Figurines

In the southern Levant during the Bronze and Iron Ages, anthropomorphic figurines and statues are usually made of clay, stone, ivory and occasionally metal (see Pritchard 1943; Barnett 1957; Negbi 1976; Tadmor 1979; Seeden 1980; Kletter 1996; Paz 2003). Some of these objects were probably an integral part of daily life (Moorey 2003). Although depictions of jewelry on these figurines are common, they have never been discussed. The jewelry items are usually schematically depicted with little detail. Such figurines usually represent specific high-ranking social functionaries, such as rulers, priests or priestesses, or cultic figures such as deities, goddesses or sacred concubines.

The most common anthropomorphic figurines wearing jewelry items are terracotta plaques, usually of female figures. These plaques were common during the Late Bronze Age and continued into the Iron Age I–Iron Age II. Ceramic cultic masks of the Iron Age II in Judah and Phoenicia sometimes have pierced ear lobes, suggesting that an earring was once threaded through them (Stern 1976: 11, fig. 4; Ciasca 1988: 363, 368–369; Kletter 2007: 193). Judean pillar figurines, one of the most common anthropomorphic expressions of the Iron Age II (Kletter 1996), lack jewelry representations, though they also appear to have been painted (Hachlili and Meshorer 1986: 39), and jewelry may have been depicted in this manner. Phoenician figurines or statues depicting jewelry are relatively few, appearing primarily in the Persian period (e.g., Markoe 1990a: fig. 15).

1.3.2. Pictorial Representations

Images of Israelites or Judahites, such as those found on the Lachish reliefs, do not depict jewelry. Though local pictorial depictions of jewelry in wall paintings or relief panels are lacking, they are found in northern Syria, southeastern Turkey and the Neo-Assyrian empire during the Iron Age II (see Madhloom 1970: 90–92; Maxwell-Hyslop 1971: 232–269; Bedal 1992), in Anatolia and Syria during the Hittite and Neo-Hittite periods (see Pritchard 1954: figs. 173–174, 455, 461, 630, 645), in Egypt during the Middle and New Kingdoms (see Wilkinson 1971; Andrews 1990) and in the Aegean region during the Middle and Late Minoan periods (Televantou 1992; Younger 1992).

Neo-Assyrian art has provided a wealth of information on jewelry, primarily through the detailed portrayals in Neo-Assyrian palace reliefs, in which certain jewelry types apparently conferred rank, status or apotropaic powers (see Madhloom 1970: 90–92; Bedal 1992; Ornan 2005b: 133–134). However, extant examples of Neo-Assyrian jewelry, such as the rich jewelry from the Nimrud tombs (Curtis and Maxwell-Hyslop 1971; Damerji 1998; 1999), are surprisingly few and insufficient to provide a realistic picture of Neo-Assyrian jewelry, probably because much was looted when the empire collapsed at the end of the 7th century (Maxwell-Hyslop 1971: 232–233). Some examples of Neo-Assyrian jewelry may thus be dated by their depictions in the royal reliefs themselves.

Egyptian pictorial depictions show lavish use of jewelry by members of the royal court and even common people are occasionally depicted wearing simple jewelry items. However, as these depictions date to the Middle and New Kingdoms and are not contemporaneous with the Iron Age II, they are of limited value for the present research. Furthermore, most Egyptian jewelry found in tombs was designed for funerary purposes and is not representative of the jewelry worn in daily life. Therefore examples retrieved from tombs are rarely those depicted in tomb paintings. The meticulous Egyptian attention to detail in funerary and monumental art also depicts the jewelry of foreigners.

Minoan and Mycenean seals, statuettes, frescoes (such as the Minoan wall paintings from Thera) and other objects illustrate numerous jewelry items (Younger 1992), though these are also much earlier than the Iron Age II and are thus of limited relevance. However, similar to the Neo-Assyrian reliefs, many of the Minoan frescoes depict women, men, children and even animals wearing jewelry in what appear to be ritual acts; the jewelry often appears excessive and possibly uncalled for considering the task depicted (Vlachopoulos and Georma 2012). Thus, the jewelry in these pictorial representations is depicted in order to impress the beholder; it is suggestive in its symbolism but not reflective of its use in everyday life.

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24 The southern Levant itself is completely lacking in pictorial depictions of the Iron Age II in which jewelry is clearly indicated.

1.3.3. In-Situ Funerary Finds

Objects found *in situ* in burials complement the pictorial evidence of how Iron Age II jewelry was actually worn, if they can be accurately associated during excavation. In addition, gender identification of excavated skeletons, if possible, can provide valuable information. Unfortunately, many skeletons uncovered in excavations are not gendered. In excavations of the early 20th century CE and before, jewelry items found in tombs were often automatically associated to women, tools and weapons to men (Goring 1996: 27), so even the published information may be biased. A truly commendable and detailed publication of the German excavations at Kamid el-Loz, shows the specific location of jewelry objects on or near single inhumations dating to the Persian period (Poppa 1978: pls. 26–41), as do the excavations of the Level IV destruction at Hasanlu in Iran, dated to the Iron Age II (Marcus 1993).

In summary, depictions of jewelry on anthropomorphic figurines and statues, and in wall paintings and reliefs, as well as in-situ finds on skeletons, all serve to illustrate how jewelry was worn and by whom. The figures depicted are individuals of high rank or status, their functionaries, and members of the population involved in cultic and ritual activities, including the deities themselves; depictions that were often intended to convey a message. Thus, the information at hand, though rich and informative, is still limited to the upper echelons of society (often male).

The evidence gleaned from these sources can shed light on the roles jewelry played in society, such as apotropaic functions, symbols of rank, status or office, and gender issues. These subjects will be dealt with in more detail in section 4.1. and Part II Chapter 7, sections 7.1.9., 7.2.6., 7.3.4., 7.4.7., 7.5.9.

Chapter 2
Materials and Manufacturing Techniques

The study of jewelry materials and fabrication techniques is integral towards an understanding of the jeweler's craft in the southern Levant during the Iron Age II. The source of materials used in jewelry manufacture may give an indication of trade contacts and may help to assess the changing political and economic forces and trade patterns that shaped the history of the Iron Age II. The choice of materials used in jewelry fabrication reflects not only their availability, but also their ease of working, their intended use and their meaning, as different materials had specific cultic/religious significance and protective powers. For the Egyptians, for example, outward appearance was no less important than the symbolic significance of the inner substance, and in some cases, the symbolic significance was primary and determined the type of material chosen (see Clarck 1986). Awareness for the inherent physical qualities of materials was also enhanced by their mythological associations and supposed magical properties (Wilkinson 1994: 82).[25] Though the aesthetic appearance, rarity and durability of materials may have led them to be categorized as precious, it was also the fact that they were recognized as such which provided them with symbolic significance (Clark 1986: 82).

Research of jewelry materials and manufacturing techniques first began near the beginning of the 20th century CE with several treatises on manufacturing techniques written by M. Rosenberg, an antiquarian and collector (Rosenberg 1915; 1921–22). In the latter half of the 20th century CE, emphasis was placed on the study of ancient materials and industries from specific regions such as ancient Egypt (Lucas and Harris 1962, Nicholson and Shaw 2000) and Mesopotamia (Moorey 1999). How materials were processed or produced is one of the parameters of a society's technological level and development and today, there is substantial literature concerning various techniques of ancient jewelry manufacture.[26]

The following chapter addresses these issues by examination of each type of material involved in jewelry production during the Iron Age II and the various techniques for jewelry manufacture. As different materials dictate and enable different manufacturing and decorative techniques, the arrangement of the following sections follows the types of materials used in jewelry production. These include metal (silver, gold, electrum, copper alloy, iron), stone (carnelian, quartz, agate, limestone, etc.), bone/ivory/shell and artificial siliceous materials, such as faience and glass that are each discussed separately as to origin, processing and fabrication techniques. The specific manufacturing techniques employed in the manufacture of each jewelry subtype are noted in the detailed typological presentation of Iron Age II jewelry in Part II.

The types of materials and techniques used in jewelry manufacture are an expression of the technological evolution of the jeweler's craft during the Iron Age II. However, the Iron Age II should not be regarded as an entity unto itself, but rather as a part of an evolutional continuum between what came before (the Bronze and Iron Age I) and after (the Persian period). Thus, what is found during the Iron Age II should be viewed in a broad perspective, as it is largely reliant on technological developments during the Iron Age I and preceding periods and is also the basis for understanding most aspects of the jeweler's craft during the subsequent Persian period. For this reason, the following discussion, though focused on the 10th–6th centuries, also refers to developments occurring before and after the Iron Age II.

Finally, jewelry workshops, where materials and technical know-how were employed by craftsmen, are assessed in light of the available evidence in order to examine how to identify such a workshop and the role of the craftsman in the manufacturing process.

2.1. Metal

One of the primary materials for the construction of jewelry is metal, from which almost every kind of ornament may be made. Nearly every metal, when first discovered, was used to decorate the human body in some fashion.[27] Not only does metal have an aesthetic, economical and possibly cultic value, but it is also durable and may be cast,

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[25] Though the ancient symbolic significance of materials is often alien to modern western culture, certain figures of speech within the English language do retain a consciousness for symbolism of substances by their metaphorical qualities: 'a golden opportunity' or also 'a golden tongue', 'a silver lining', 'a leaden feeling', 'an iron will', 'a stone heart'.

[26] For the various publications cited in this work, see for example Williams 1924; Higgins 1961; Lucas and Harris 1962, Forbes 1964; Hoffman and Davidson 1967; Higgins 1969; Rudolph and Rudolph 1973; Carroll 1974; Ward et al. 1981; Francis 1982; Ogden 1982; de Callatay 1983; Destrée 1983; Stocks 1989; Andrews 1990; 1994; Moorey 1999; Nicholson and Shaw 2000; Spaer 2001.

[27] Though not directly relevant to the study of ancient jewelry, the novelty of new metals may be seen in the story of Napoleon III, who dispensed of his fine silver tableware to replace it with an expensive new metal – aluminum (Ogden 2006: III).

hammered or bent into almost every desirable shape. Silver, and especially gold, also held added values of radiance and luminosity that provided them with a cultic/religious power and significance (Winter 1994). Although gold and silver have always been the favored precious metals used in jewelry manufacture, other metals, such as copper alloy and iron, were also used.

2.1.1. Materials, Sources and Initial Processing

Four primary types of metals were used for the production of jewelry during the Iron Age II: silver, gold, copper and iron, in addition to alloys that employed one or more of these metals, such as copper alloyed with tin to make bronze or with zinc to make brass. Such alloys are here discussed under the heading of their primary metal.

Silver, gold and copper alloy are commonly found employed in the production of earrings, pendants, small and large rings, amulets and beads. Silver and gold are considered precious metals not only because they are less commonly found than copper or iron, but also because they are more malleable and may be formed into thin foil and wire, thus facilitating their use in jewelry production. The primary appeal of gold is to the senses (Sutherland 1959). For the ancients, the importance of gold and silver lies primarily in their inherent physical and symbolic properties, less so for their scarcity. The non-corrosive value of gold, its glow and radiance and the ease with which it could be worked sets this metal apart from all the others. In contrast, silver oxidises quickly and in the field, corroded silver may often be confused with corroded copper, so the actual amount of silver items recovered in excavations may be underrated. However, silver was also prized for its color that when polished, could reflect light.

Although silver and gold have always been the jewelry materials *par excellence*, copper or a copper alloy was always a readily available and much cheaper metal for the jeweler to use during the Iron Age II. Larger jewelry items, such as armlets or bracelets, were usually made in copper because they require more metal mass than smaller jewelry items. An item may also be made cheaply by using copper covered by silver or gold foil, giving the impression that the entire object was made of precious metal, as for example two matching Type I.1a Earrings of gold-plated copper alloy dated to the early Iron Age II from Tawilan (Ogden 1995: 73, fig. 8.25).

Iron is rare in jewelry, not only because it is more difficult to refine, but also because it is not easily formed into small shapes. Iron jewelry is therefore limited to large rings and the occaisional small, simple ring or bead.

As most of these metals need to be mined and then processed in order to utilize them, their procurement is also a measure of technological ability. The sources of these metals are an indication of trade patterns while their relative frequency of use may possibly be an indication of changing political and economic realities that affected the ancient Near East during the Iron Age II.

2.1.1.1. Silver

Native silver is rare and has to be obtained from ores containing silver in small amounts such as gold, that contains a certain amount of silver. Galena ore (lead sulphide) contains silver and is the most common form in which unrefined silver is found, but other minerals, such as cerussite (lead carbonate) or jarosite may have also been used in the silver refinement process (Patterson 1971; Muhly 1998: 318; Moorey 1999: 232–233).

The origins of silver metallurgy in the Near East go back to the 4th millennium (Prag 1978), The use of lead, from which most of the silver appears to have been refined, is known much earlier, during the 7th millennium in Anatolia (Jesus 1980: 76). Some scholars have suggested that since lead ore has to be smelted in order to obtain lead itself, silver was actually discovered by accident as a by-product during the lead refining process (Wertime 1973).[28]

The Levant itself has very few galena ore deposits. To the north and east, two of the most likely sources of galena are Anatolia and Iran, where rich deposits are known and were mined since the 4th millennium and continued to be mined in the 1st millennium (see Forbes 1964: 206–226; Moorey 1999: 234–235). In particular, ancient silver mines in the Taurus mountains of southeastern Anatolia have been extensively researched (Yener 1983; 1986; 1991) showing these to have been in use since the 4th millennium.[29]

To the south, Egypt is well-known for its gold deposits but has very little silver (Lucas and Harris 1962: 245–249).[30] For the Egyptians, silver was symbolically linked with the moon and often represented the lunar disk, so

[28] By the Iron Age II, the silver refining process had become so well entrenched and understood by the ancient alchemists that even artificial deceptions were known. A text from the library of Ashurbanipal describes a silver-like alloy made from base metal ingredients (Oppenheim 1966) such as tin and antimony (see section 2.1.1.4.).

[29] This area may have been the ‘silver mountain’ referred to in the inscriptions of King Sargon (Moorey 1999: 234-235).

[30] For this reason, Egyptian silverwork is practically non-existent. Until the Middle Kingdom, silver was so rare in Egypt that it commanded a higher price than gold. During the New Kingdom and until the Graeco-Roman period, silver in Egypt was still worth twice the price of gold and was obtained as booty, tribute or trade (Gale and Stos-Gale 1981: 103-104, 113; Andrews 1990: 56).

that statuettes of baboons, sacred to the moon god Toth, were frequently made of silver (Wilkinson 1994: 84). The Egyptians referred to silver as *nub hedj* or 'white gold' and believed it to be the material from which the bones of the gods were made whereas gold was their flesh (Andrews 1994: 105–106).[31] Galena deposits are found in Egypt but it is uncertain if they were ever worked for their silver content or only for the lead (Ogden 2000: 168–169). Analyses of these deposits indicates a very low silver content (Gale and Stos-Gale 1981). It has been suggested that the Egyptians may have simply extracted aurian silver from refining their plentiful gold deposits (Lucas and Harris 1962: 254) yet so far, analyses of Egyptian silver objects has not supported an indiginous origin (Ogden 2000: 170). In Arabia, galena deposits are mentioned by the historian Strabo (*Geographica* Book 16: 4: 18) but the Arabian peninsula is generally poor in silver and lead ores (Moorey 1999: 235).

To the west, silver may also have been obtained from known galena deposits in Sardinia, Greece, the Balkans and some of the Aegean islands such as Siphnos. The source of silver in mainland Greece was most probably the region of Mount Laurion. Extensive research of deposits in this region has shown that they were extensively exploited from at least the beginning of the Mycenaean period, through the Archaic and Classical periods and until the 19th century CE (Gale 1980; Gale and Stos-Gale 1981; Stos-Gale and Gale 1982; Kakavoyannis 2001). Silver originating from Laurion is known to have found its way to Egypt during the Late Helladic period (Gale 1980: 178). The rich galena deposits in Spain were mined as early as the Late Bronze Age and during the 1st millennium as well (Stos-Gale 2001). From a much later period (2nd century CE), Diodorus states that one of the reasons for the wealth of the Phoenicians was the large amount of silver that they acquired in Spain (*Diodurus* Book V: 35: 4–5) while access to silver may be one of the reasons why the Phoenicians reached Spain in the first place.

In the oracle agaist Tyre, the prophet Ezekiel relates that silver, iron, tin and lead came to Tyre from the land of Tarshish (Ezek 27: 12). The location of biblical Tarshish is a matter of some debate, but on the basis of the similarity between the names, Tarshish has often been equated with Tartessus of the Greeks, generally identified in the western Mediterranean, i.e. Iberia or Sardinia (see Koch 1984; Thompson 2007: 11–23). However, Muhly (1998) has pointed out that during the 10th–6th centuries, the available evidence indicates Mediterranean trade in various cargoes but not silver, so that the identification of the biblical Tarshish with Tartessus in Spain or Sardinia remains obscure and uncertain.

Galena deposits were usually worked for their silver content, and large amounts of lead were formed as a by-product of the refinement process. Lead traces left in silver derived from galena is of great value in isotope studies that may determine its source (Stos-Gale 2001)[32] but has so far been carried out on a very limited amount of items. The most recent research on the origins of Iron Age silver using lead isotope analysis has been carried out by C. Thompson, who analysed samples from 13 silver ingot and jewelry hoards found in the Levant (Thompson 2007). Preliminary results indicate Anatolia, Sardinia and Greece as primary sources of most Iron Age silver, with lesser amounts originating in Spain and possibly Iran. Results of such analyses are often problematic as silver originating from two or more sources could also have been melted together in the past, thus mixing together the trace elements of the different sources and effectively 'blurring' the fingerprint. However, Thompson's research indicates that the majority of the silver ingots, jewelry and scrap that she tested were not remelts but fit in well with one or another of trace element profiles known from around the Mediterranaean and the Near East.

Published evidence has so far indicated the origins of Levantine silver to be in Greece, Iran and Spain (Stos-Gale 2001: 72). Silver items from several 7th century silver hoards of jewelry, ingots and *Hacksilber* from Tel Miqne-Ekron (Gitin and Golani 2001; Golani and Sass 1998) indicate the mines of Laurion and Chalkidiki in mainland Greece and the island of Siphnos in the Aegean (Stos-Gale 2001: 61–62, table 4.3). Thompson (2007) has highlighted Sardinia as a major source of silver nearing the end of the Iron Age I. The large amount of 7th century Phoenician-type jewelry from the Tel Miqne-Ekron hoards in addition to Phoenician pottery at the site suggests the Phoenicians as responsible for the trade in silver that brought this material from Greece and Sardinia to the southern Levant.

Lead isotope analyses of silver items from a hoard containing broken down jewelry and *Hacksilber* from Shechem, dated anywhere from 1200–200[33] (Wright 1965: 8), indicated the origin of the silver to have been from Spain and Iran (Stos-Gale 2001: 62–64, table 4.4). An analysis of Egyptian silver from the Middle and the New Kingdoms has also suggested an Iranian source (Gale and Stos-Fertner 1978; Stos-Gale 2001: 70–71). However, as Iranian silver has a relatively high gold content, the silver in Egypt could have also been refined from local Egyptian gold deposits (aurian silver) where a high gold content is also to be expected. The distant Iranian sources are

[31] In a similar fashion, the Incas of South America also likened gold to the sun and silver to the moon (Ogden 2006: 34) while gold was also seen as the tears of the sun (Clark 1986: 88).

[32] Galena deposits throughout the world have different ratios of certain radioactive isotopes. The measurement of these minute quantities provides a 'fingerprint' of the deposit from which the ore originated.

[33] Though this hoard was given the latest possible date (Hellenistic) by the excavator, the lack of coins that are a recurring feature in nearly all Hellenistic silver hoards, makes an earlier date to the Iron Age more probable.

not surprising as trade in lapis lazuli from Afghanistan, certainly passing through Iran, reached Egypt as early as the 3rd millennium (Lucas and Harris 1962: 398ff.; Andrews 1990: 47–48). A Spanish origin for the silver is quite possible if one accepts the link of Spanish silver to Phoenician trade as implied by Diodorus. However, Muhly (1999: 318) has rightly asked why would the Phoenicians, or the Greeks for that matter, go off in search of silver from such distant sources if abundant deposits are found much closer to home in Greece and Anatolia itself. If the Phoenicians were instrumental in bringing silver from a western source during the Iron Age II, this source may just as well have been Greece, and not necessarily Spain as Diodorus would have us believe. Despite its distance from the southern Levant, lead isotope analyses of Iron Age silver does indicate Spain as a source, albeit a relatively minor one.

Lead isotope analyses of silver is fraught with problems. For example, silver from the Rio Tinto region in southern Spain does not originate from silver-bearing galena (lead) deposits which are the usual source of silver in the ancient world, but rather from other, complex ores that needed the addition of lead in order to absorb the silver contained in them. As this lead had to be imported from an unknown source in order to extract the silver, the actual ‘signature’ of the trace elements in the lead may not be Spanish at all though lead (galena) deposits are known from other regions in Spain (Muhly 1998: 317–318).

The ancient technique of extracting the silver from galena ore is relatively simple and was known in Asia Minor from the beginning of the 3rd millennium (see Forbes 1964: 226–239). It appears to have been practiced in the Levant at least from the Late Bronze Age, as suggested by the large amounts of lead ore found at Ras Ibn Hani near Ugarit (Bordreuil et al. 1984: 404–408). The technique involves crushing galena and then smelting it until it begins to decompose, releasing most of the sulphates as gas (sulphur dioxide) and leaving behind primarily lead oxide (litharge). Further heating sublimates the litharge to a lead-silver alloy with many impurities. To separate the silver from the lead, the lead-silver alloy is melted in a porous clay crucible, termed a cupel, over a charcoal fire. In this stage of the process, termed cupellation, the lead and most of the impurities are removed by a current of air. The oxygen in the air combines with the lead into a gas that blows away or is driven as lead oxide into the porous walls of the crucible, leaving behind a residue of silver. The residue was then collected and remelted into ingots.

Metallurgical analyses of local silver jewelry from the Iron Age II shows great variation in their actual silver content. A limited analyses on several silver earrings found in tombs at Tel ʽIra dated to the 6th century (Freud 1999: table 8.2) shows that while some have a relatively high silver content of 99%, other examples were composed of only 16% silver. Most of these ‘silver’ items were found alloyed with copper in various amounts while minute quantities of lead were also found. Even in earrings of identical type, size and construction found together in the same tomb, discrepancies of almost 9% were found in the silver content (Freud 1999: table 8.2: 13, 14). This appears to indicate that either these seemingly identical earrings were made at different workshops, or if they were made in the same workshop by the same craftsman, they were made from different batches of alloy.

2.1.1.2. Gold

In its native form, gold may be found as alluvial (placer gold) deposits in the form of small specks or nuggets in rivers or in gold bearing veins or lodes of quartz (reef gold).[34] These could be ground down and washed to retrieve the small gold particles whose higher density makes them sink faster than other minerals in the washing process .[35] As gold does not combine chemically with oxygen or sulphur, it never corrodes and is found in its natural metallic state (Patterson 1971). In its natural state, gold is always found alloyed with some silver and sometimes with copper or iron. Gold with very little or no silver content has been deliberately refined. Over 20% silver content gives the gold a pale color, an alloy often refered to as electrum which the Egyptians refered to as *djam*. Because electrum is harder than gold it was better suited for the production of jewelry to withstand the wear of use and for this reason, was used from the time of the earliest Egyptian dynasties. The inclusion of copper or iron, whether natural or intentional, also hardens the gold and gives it a reddish color. For aesthetic, economic or cultic reasons, silver, copper or iron were often added to gold as early as the 3rd millennium (Plenderleith 1934: 286). In addition to the alloying of gold with other metals, the color could also be slightly changed by surface treatment of the gold (Maryon 1949: 106; Lucas and Harris 1962: 233–234).

Metallurgical analyses of gold jewelry reveals the varied nature of gold alloys. Such an analyses was carried out on gold jewelry from the Tawilan hoard in Jordan dated to the early Iron Age II (Ogden 1995), revealing different gold items to be alloyed with between 7–40% silver and between 2–11% copper. Native gold rarely contains more than 2–3% copper, so a high copper content in some of the items is evidence of deliberate artificial alloying. The

[34] This distinction is also found in the Assyrian textual sources (Moorey 1999: 217).

[35] Gold mining in Egypt is described by Diodorus Siculus from the 1st century CE (*Bibliotheca Historica* Book III: 12-14) (see Lucas and Harris 1962: 224ff.). This method of gold extraction is so simple and efficient that it is still used today. For a description of ancient Egyptian mines and mining expeditions, see Muller and Thiem 1999: 40-49.

large amount of silver in the gold may be natural, indicating that silver was probably not intentionally added. Several identical matching items within this hoard may indicate that they were made by the same workshop or goldsmith.

Unlike silver which is usually not found in its natural metallic state, gold does not need to be refined unless a higher degree of purity is needed. The process of cuppelation used to refine silver will remove other metals from gold[36] but not silver; which may be removed by adding salt to the gold, a process termed cementation (Moorey 1999: 218–219). This process appears to have been practiced with certainty by the 1st century CE as related by Diodorus Siculus (*Bibliotheca Historica* Book III: 14: I f.), but some scholars have suggested its practice by the Egyptians already during the Old Kingdom (Notton 1974). Clear evidence for the refinement of gold is not found prior to the Achaemenid period (Lucas and Harris 1962: 229)[37] indicating that native gold was the form used in jewelry manufacture, though possibly alloyed with other metals to provide a different color effect, for economical reasons or for durability. Locally, gold is found in use as early as the Chalcolithic period, as evidenced by the worked gold rings from the Nahal Qanah cave in Israel (Gopher and Tsuk 1996).

A simple way to assay gold was by use of a flat touchstone of black chert or flinty black slate to test its relative purity, or approximate carat value in modern terms. Use of this method is attested by classical authors as early as the 6th century (*Theognis*: 417; Pindar, *Pythian*: 10: 67; Moorey 1999: 219) and consists of rubbing a streak of the gold being assayed and comparing it to a streak of gold of known composition on the same stone (Oddy 1983; Moore and Oddy 1985). Unfortunately, such stones are virtually impossible to identify in the archaeological record.

Due to the high value that gold was given throughout the ancient Near East, Egyptian and Assyrian terminology for gold is varied and arises from the different sets of circumstances in which it was employed. For the administrator and craftsman, there were different terms that conveyed information on source, appearance and degrees of purity. In Egypt, gold also possesed a poetic or symbolic vocabulary and the craftsmen who worked it also used terms in slang or demotic phrases (Moorey 1999: 218).

For the Egyptians, gold was both magical and divine (Wilkinson 1994: 83–84), its symbolic power stemming from its shine and enduring qualities that were linked to eternal life (Winter 1994). Gold was the symbol of the sun, the material of the flesh of the gods, the color of divinity and was termed *nub.* This noun might have given the name for the area where much of Egypt's gold originated from- Nubia. Strabo (*Geographica*) was the first to refer to the area of southern Egypt and northern Sudan by this name (Andrews 1990: 54).

Gold deposits are not known in the region of Syria-Palestine[38] and Mesopotamia, but are abundantly found in some of the neighboring regions such as Anatolia (Maxwell-Hyslop 1977; Jesus 1980: 82ff.). The exploitation of rich gold deposits is well-known in the eastern desert of Egypt and in Nubia in the south already in the Pre-Dynastic period (Higgins 1961: 4–6; Forbes 1964: 157–165; Lucas and Harris 1962: 224–228; Andrews 1990: 53–55; Ogden 2000: 161–162). To the southeast, Arabia was well-known for its gold deposits by classical and biblical authors alike (see Diodorus Siculus, *Biblioteca Historica* Book III: 14: 6ff.; Strabo, *Geographica* Book 16: 4, 18, 22; I Chron 29: 4; I Kings 10; Job 22: 24). This region or the east African coast of the Red Sea, may possibly be identified with the biblical Ophir, from where much gold was brought (I Kings 9: 28, 10: 11, 22: 49; Psalms 45: 9).[39] An ostracon from Tel Qasileh, found out of stratigraphical context but probably datable to the Iron Age II, specifically mentions gold from Ophir whose destination was Beth Horon (Maisler 1951). Scattered gold deposits are also known in the Balkans, the Greek mainland and in some of the Cycladic islands (Ogden 1982: 11–18). Spanish gold may have also reached the Levant during the Iron Age, most probably by way of the Phoenicians.

One need not look far for the source of gold used locally during the Iron Age II. Egyptian gold, plentifull during the Middle and New Kingdom in Egypt and in Canaan during the Late Bronze Age, may have continued to be supplied during the Egyptian Third Intermediate Period though on a much lesser scale than before (see below, section 2.6.2.). The smaller amounts of gold in the Iron Age II may also have been reworked melt-downs of earlier artefacts that were traded, collected or plundered over time.

The proveniencing of gold is more problematic than that of silver, as lead isotope analysis is largely irrelevant for gold (Moorey 1991: 220–221) though other measures for mineralogical 'finger-printing' of gold have also been

36 Gold refining may have been used in the ancient Near East as early as the Late Bronze Age. In the el-Amarna letters, the king of Babylonia complains to Amenophis III of Egypt about the quality of gold sent to him from Egypt, which after 'refinement' in a furnace came out only 25% gold (Knudtzon 1915: 70-71, 92-93). However, the evidence for the deliberate refinement of gold into a more purified state does not appear .. before the Persian period so that all Egyptian gold prior to the Egyptian Late period probably originated from unrefined sources (Ogden 2000: 163).

37 Probably due to the development of coinage, which necessitated standardization of the gold value in the metal.

38 A gold-mining site northwest of Eilat has recently been located, though the archaeological evidence points to its exploitation no earlier than the Islamic period (Gilat et al. 1993). Since there is now evidence for local gold deposits, indications of earlier exploitation may await discovery.

39 Though the specific location of the biblical Ophir has been debated (see Christidès 1970), it is generally agreed to have been on the east African coast of the Red Sea, in the vicinity of the land of Punt (Ikeda 1991).

proposed (Whitmore and Young 1973).[40] Both gold and silver suffer from the same problem of remelting of the metal from different sources which would appear to skew any ‘finger-printing’ of the primary source. Thus, no reliable provenience studies have been carried out on gold objects from the ancient Near East.

2.1.1.3. Copper and its Alloys

Copper and its various alloys of bronze, brass and arsenical copper was the most widely used metal throughout the Near East since the Chalcolithic period. In Mesopotamia, copper was the most common and the cheapest metal until the Neo-Babylonian period, when it was replaced by iron (Moorey 1999: 242). Modern bronze, a copper alloy, has a ratio of about one part tin to nine parts copper (Moorey 1999: 251). As tin is of limited occurrence in the Near East, it is generally assumed that an alloy of copper and at least 5% tin, thus creating bronze, is deliberate. However, 0.5% of tin has also been proposed as intentional (Cleuziou and Berthoud 1982: 15). This is also the case with brass, an alloy of copper and zinc, which produces a dark yellowish-brown metal that may sometimes be mistaken for gold.[41] In the Near East, brass is generally thought to appear only in the late Iron Age (Moorey 1999: 242) but recent studies have shown it to be found as early as the Middle Bronze Age II (Ladizinskaya 2002: 147, n. 2) or even earlier (Ogden 2000: 155). Some of the bronze Assyrian bowls from Nimrud contained about six percent zinc in addition to tin (Hughes 1988: 313) though this may have been unintentional. Further testing of items passing for gold by the naked eye may actually show them to be brass.

Arsenic and antimony are metals that may naturally occur within some copper deposits, so that when processed and refined produce an unintentional alloy which is harder than pure copper.

Copper may also be obtained as a native metal from various mineral compounds (see Röllig and Muhly 1983). These are usualy oxides, such as cuprite or malachite, that when found on the ground surface, are readily identifiable, accessible, and easy to work. The ore must be mined and refined by smelting in order to separate the copper from other minerals. As early as the Chalcolithic period, this was done by crushing the ore then heating it in a crucible until the heavier copper sinks to the bottom while the lighter minerals float to the top as slag (Tylecote 1974; Rheder 1986; Rothenberg 1990). The addition of some kind of iron ore as a fluxing agent, assisted the formation of the slag and hence the separation of the unwanted impurities from the metal (Cooke and Aschenbrenner 1975). This stage of the process, usually carried out at the source near the mines, produces ‘raw’ or ‘black’ copper, that is usually transported to settlements where metalsmiths further worked and refined the copper. Successive melting and refining of the raw copper produces copper of higher purity.

Copper sources abound in the southern Levant where deposits have been exploited in the southern Negev and Sinai since the 4th millennium (e.g. Lucas and Harris 1962: 201ff.; Rothenberg 1990) as well as in southern Jordan (e.g., at Feinan, see Hauptmann 1989; 2007). Farther afield, rich copper deposits are known from Cyprus (Muhly 1982) and eastern Anatolia (Jesus 1980) as well as Iran and the Arabian gulf (Moorey 1999: 247).

Arsenical copper is the most common copper alloy, being naturally found in Anatolia (Jesus 1980: 91) and Cyprus (Panayiotu 1979) while locally, it appears to have been in use already during the Chalcolithic period (Levy and Shalev 1989). This alloy (with 2–3% arsenic) could have also been made by the deliberate addition of arsenic-containing minerals during the smelting process to facilitate casting by causing the molten metal to flow more smoothly (Moorey 1999: 242–250; Ogden 2000: 152–153). Arsenical copper is harder and more durable than pure copper and therefore more usefull for the production of tools, but a more malleable (and thus purer) copper would seem to have been better suited for production of small jewelry items. A copper alloy of high arsenic content also bears an outer silvery color that tarnishes more slowly than silver itself. In casting, the surface of the metal is enriched by the arsenic, forming an outer skin of silvery-like metal (Ogden 2000: 153). This feature was known to local smiths as early as the 3rd millennium (Shalev 1988) and was shown to have been used to manufacture mirrors in Egypt and small statues in Anatolia (Smith 1973).

The addition of of at least 0.5%, but sometimes up to 17% tin, thereby creating bronze, gives copper a greater hardness than that of arsenical copper, thus making bronze a favored alloy for tools and weapons.[42] In addition, a

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40 Certain trace elements of the Platinum group may be detected in secondary gold (gold that has been refined from ore) from Mesopotamia and such an analysis has revealed much of the Achaemenid gold to have come from that region (Meeks and Tite 1980). However, the validity of such analyses has been questioned (Ogden 1977) and the large amount of primary gold in nearby Egypt posits it as a more likely source for the gold found in the southern Levant.

41 Brass and its identification has long been misunderstood as early as the 17th century CE when the King James Bible used the term to describe various copper alloys, a confusion still retained in modern translations such as that of the Jewish Publication Society (see for example in Deut. 8:9). The term brass is sometimes used interchangeably with bronze but brass has a yellowish-brown color resembling gold and is made up of about a third part zinc along with copper (Moorey 1999: 254).

42 Metallurgical analyses of copper alloy jewelry and weapons such as arrowheads and spearheads of the Intermediate to Late Bronze Age originating from dolmens in the Golan Heights (Epstein 1985) has shown the copper content of the sampled objects to vary between 95-50% with no correlation between the type of object and the copper content. In this case, for items cast of copper alloy, no distinction was

copper-tin alloy has a distinct silvery color that imparts it with an aesthetic appeal. The addition of tin to the copper makes it easier to cast by lowering the melting temperature and making it less prone to shrinkage and porosity. This can also be achieved by deliberate addition of lead or arsenic. Ease of casting is an important consideration if copper is to be used in jewelry manufacture.

Lead may also be added to copper, for the same reasons that it is found with arsenic or tin. The addition of lead to copper in Egypt is rare before the Middle Kingdom and lead levels as low as one percent may even be deliberate. Large scale additon of lead to copper, even up to 25%, is generally attributed to the New Kingdom and a high lead content in Egyptian artefacts is primarily indicative of the Egyptian Late Period (Ogden 2000: 154–155) suggesting importation of lead, possibly as a result of increased silver production and its transportation during the Iron Age II.

Metallurgical analyses for copper alloy jewelry items that can determine what specific additions were made or to what degree other metals were naturally alloyed with the copper are few. As a result, in describing copper-based objects, the designation 'copper alloy' must suffice. The sources of naturally occuring alloys, like that of arsenical copper, are relatively close at hand, though the present state of research does not enable us to determine which of these sources was in use during the Iron Age II in the southern Levant.

2.1.1.4. Tin and Antimony

Tin is found in alluvial deposits as pebbles that may be differentiated from other minerals by weight and not by form or color. As such, it was probably retreivable by washing of alluvial deposits, much like gold. Tin may also appear as the mineral cassiterite, found in Egypt, but there is no clear evidence for its exploitation there though a limited tin vein in Egypt has been found and was exploited in the previous century (Lucas and Harris 1962: 253). In Egypt, tin apppears to have been intentionally alloyed with copper to create bronze only during the early 2nd millennium (Muhly 1985: 283) but what sources were actually exploited in the past remain obscure. Tin-bronzes are known from Anatolia during the 3rd millennium (Stech and Pigott 1986: 52–56).[43] Antimony appears in limited use in Egypt for jewelry production, the only confirmed examples are a few small beads excavated at Lahun by Petrie from the Third Intermediate period (Ogden 2000: 149). Turkey appears to have been the most likely source for antimony (Jesus 1980: 51ff.).

Objects of tin itself are easily confused with silver, the difference between the two is not always readily apparent to the eye. Because of this, tin may have been used for personal ornaments more often than is thought, a suggestion that can only be validated by further laboratory analyses. However, tin by itself is not easily worked and tends to crack easily unless it is frequently annealed or alloyed with another metal.

Antimony is a very brittle metal that occurs in nature as a sulfide (stibnite) and to a lesser extent in combination with other kinds of metal sulphides (Lucas and Harris 1962: 195–199). It is often found as a trace element in natural copper but its use as a metal in ancient times is infrequent, and probably originates from the rare native metal of antimony found in granular masses with a tin-white, metallic color in limestone or marble veins, found in small quantities in Iran, Kurdistan and Transcaucasia (Moorey 1999: 241).

Antimony combines readily with many other other metals to form a white metal of bluish tint that is maleable and ductile. Such a metal might also be confused with silver that when covered with corrosion, has a purplish-gray color. Four beads from an Iron Age tomb at Tell el-Farʿah (S) were found made of 66% tin and 33% antimony (Dayton 1978: 450) and small personal ornaments of antimony are known from Iron Age levels at Hasanlu in Iran (Dyson 1964). Whether plain or alloyed, antimony was apparently used sporadically in the ancient Near East.

2.1.1.5. Iron

Terrestrial iron deposits are relatively common throughout the Near East, and one need not leave the southern Levant to obtain it. Even the Biblical texts that glorify the richness of the Promised Land refer to "a land whose stones are iron" (Deut 8: 9). Iron could have been collected as lumps of meteoric iron, refined from iron bearing ore, or possibly also as a by-product of the copper smelting process (Cooke and Aschenbrenner 1975; Moorey 1999: 279–280; Waldbaum 1999). In Egypt, iron before the 18th Dynasty was primarily of meteoric origin so that it

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made as to their function; the addition of other elements to the alloy was either unintentional (naturally occuring), or was purposeful to aid in casting.

In the manufacturing process, differences in function were more likely dealt with in the manner that the metal was worked and not so much in the composition of the alloy itself. However, some Egyptian finger-rings from the New Kingdom do appear to have been deliberately alloyed with 8-10% tin in order to achieve a certain color (Ogden 2000: 154).

43 However, the validity of the geological claims for tin in Turkey and the production of bronze using Anatolian tin are disputed (Hall and Steadman 1991; Muhly et al. 1991).

was refered to as 'metal of heaven'. Invested with sacred significance and a particular magical potency, iron was used by the Egyptians on mummies in the 'opening of the mouth' ceremony (Wilkinson 1994: 84–85).

Iron appears in archaeological contexts and in historical texts in reference to precious articles as early as the 4th millennium throughout the ancient Near East (see Lucas and Harris 1962: 235–243; Waldbaum 1980; 1999; and see McNutt 1990 for an inclusive archaeological and literary review of ironworking in the ancient Near East). Simple hammered iron beads are known from Egypt and Iran from as early as 3000 (Ogden 1982: 27). The earliest known forms of iron were accorded high status and during the Late Bronze Age, iron was not treated as a utilitarian material, as was copper (Waldbaum 1999: 28–31). Iron weapons with gold ornamentation as well as singular items of iron jewelry are found as early as the 3rd millennium and throughout the 2nd millennium, iron is treated as a luxury material like gold (Waldbaum 1999: 28–31). Around 1200, there is a general increase in the number and percentage of iron objects in relation to copper. By the 10th century, iron was seen as a utilitarian, and not a luxury material that was commonly used for weapons and tools (Stech-Wheeler et al. 1981; Waldbaum 1999: 32).

A smithy for the forging of iron objects is reported from Tel Sera, found within a fortress/citadel dated to the 7th century (Oren 1993: 1333–1334). Recently, an iron production center dated to the 10th–9th centuries has been excavated at Tell Hammeh az-Zarqa in the Jordan Valley (Veldhuijzen and van der Steen 1999; Veldhuizen and Rehren 2007), in addition to a 9th century iron workshop at Tel Beth-Shemesh (Bunimovitz and Lederman 2003), but some evidence for local iron smelting is also found already during the Late Bronze Age (Waldbaum 1999: 28–31). Though the iron products found at Tel Beth-Shemesh include primarily utilitarian items such as arrowheads, ploughshares and blades, the fact that even small items such as arrowheads were worked at this locale suggests that other small items such as rings could also been manufactured as well.

Though the material was readily available, the use of iron in jewelry manufacture was always limited. This is because of the high temperatures needed to work iron and because of its tendency to quicky oxidize and corrode. Thus, much of the archaelogical record concerning iron jewelry is lost simply because whatever is found is usually so corroded and fragmentary as to be largely unidentifiable and worthless. When found, iron jewelry is composed primarily of large and less often of small rings (e.g. at Cave A4 in the Jordanian Baqʻah Valley, see McGovern 1986). At Lachish, Tufnell notes that numerous fragments of large iron rings were found from tombs earlier than the 8th century but these were so deteriorated that they were often not saved, recorded or published (Tufnell 1953: 389).

The ancients were never really able to cast iron, only to work it in a semi-molten state. Even in this state the material was difficult to shape and brittle when cold. Despite its status as a luxury item until the Iron Age I, the difficulties in working and shaping iron nearly precluded its use for jewelry manufacture. Almost all the iron jewelry of the Iron Age is found in the form of simple thick large rings such as bracelets or anklets that appear primarily nearing the end of the Iron Age I and continue through the Iron Age II.

2.1.2. Techniques of Working and Fabrication

The following is a general description and summary of the various techniques encountered in the Iron Age II with reference to their specific applications in Iron Age II jewelry. The techniques discussed in this section are usually specific to silver and gold work, although many of them are also relevant to items made of copper alloy and to a lesser degree iron.

Egyptian funerary depictions from the Old and Middle Kingdoms depict precious-metal workers, though these show only portions of the processes involved. A preliminary stage to all scenes of metalworking is that of weighing out the precious metal before its allocation to the workers (see Fig. 1: 1), the finished products were probably re-weighed at the end of the process to ensure that no scrap found its way into their pockets (Andrews 1990: 83).

2.1.2.1. Casting

The first step in the construction of solid metal jewelry items is casting molten metal into a mold. Egyptian depictions of the Old Kingdom often depict the casting process, which usually involved the work of several men, usually depicted sitting side by side and blowing air through reeds into the embers surrounding a crucible (Fig. 1: 1). By the time of the New Kingdom, however, invention of the foot bellows enabled this task to be done by one man. After melting in a crucible, the metal was poured into a mold.

Castings made in open or one-piece molds naturally have a plain flat upper surface, usually marred by slag and cooling contractions. For this reason, open molds are seldom used in jewelry production. The only types of metal objects possibly made in open molds during the Iron Age II are certain thick and heavy bangles (Part II, section 7.3.1.; Type I.5 Large Rings, Fig. 20: 2–3). These are of semicircular section, where one side is flat and of rough texture, while the rest is rounded and smooth. In Egypt, open molds were used for the casting of flat-backed amulets, in addition to jewelry components such as rings and ring bezels during the New Kingdom (Andrews 1990: 86). Casting was possible in the production of basic forms such as Type I.1 Earrings (Fig. 8: 1–6), which may have been further worked by hammering and then polishing, thus removing all traces of the casting process.

The small jewelry molds occasionally found in excavations (see Fig. 1: 2) are usually either dies for forming sheet-metal in *repoussé* (see below section 2.1.2.6.) or parts of more complex two-part molds. As most stones may crack when exposed to the extreme heat of molten metal, many of these molds might have actually been used for the casting of wax anti-types and not metal itself[44] using the 'lost wax' or *cire perdu* technique (Ogden 2000: 157). In this method, a carved or molded wax model of the desired form (the anti-type) is coated with several layers of fine clay or plaster (the investment). When hard and dry, a hole is pierced through to the wax core, the investment is heated and the molten wax is poured out while the molten metal is poured in. Once it has cooled down, the investment is broken and the casting removed. Thus, while each anti-type is used only once, a two-part stone mold may be used to duplicate the wax anti-type repeatedly. In addition, many of the applied decorations, such as wire bands and even granules, can be cast along with the rest of the earring in one piece, an operation that would have saved much time and effort.[45]

Such molds are not infrequent in excavations and when found, are always associated with large sites[46], indicating that casting of jewelry objects took place only at large urban centers were goldsmiths and silversmiths are likely to have set up shop. Unfortunately, only a very few of the objects represented in these molds may be identified with actual excavated items. In addition, though it is assumed that these molds were used for the casting or forming of metal jewelry, they could have also been used for mold forming of beads and pendants in glass or faience.[47]

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44 For more on this, see Higgins 1961: 16-17. Experiments in stone mold casting have lead some researchers (Andrae 1943: 22-23) to claim that most stone molds were actually for making wax models. Gold or silver can be cast in molds of steatite or serpentine stone, but not in molds made of other types of stone. This is because steatite is a relatively soft stone that is easily carved and can withstand high temperatures without fracturing.

45 For example, a mold from Gezer (Fig. 11: 10; Macalister 1912c: pl. 136: 21) features a mulberry earring along with granules at its base, all cast as one piece instead of attaching the granules separately.

46 These include the following local examples, most of which are to be associated with the Late Bronze Age:

Tel Beth-Shean – A stone mold of serpentine with several rings, dated to the period of Seti I (13th century, Rowe 1940: pl. 53A: 8) and a steatite mold for a diadem with pomegranates, also dated to the Late Bronze Age (Rowe 1940: 93, pl. 71A: 5). The first mold appears to include an Earring of Type II.8a (Fig. 11: 21-24).

Megiddo – Three mold fragments made of steatite and serpentine stone for the production of simple rings and possibly one attachment earring, all associated with Strata VI-V (11th–10th centuries, Loud 1948: pl. 269: 6-8).

Another steatite mold fragment, probably of the Late Bronze Age, is worked on both sides and was found out of context on the slope of the mound. One side bears a mold for two simple rings; the other bears a 'Cappadocian Star' decoration (Lamon and Shipton 1939: pl. 105: 6).

Gezer – A mold fragment for the production of a Type II.6a Earring (Part II, sect. 7.1.2.; Fig. 11: 10), probably associated with the Third Semitic period (Macalister 1912c: pl. 136: 21) and half a mold with elongated funnels for the production of three different kinds of attachment earrings, a ring, a pendant and a pin (Macalister 1912b: 260-261, fig. 407), also associated with the Third Semitic period (Late Bronze Age).

Tell Jemmeh – Two separate limestone fragments of unclear date and provenance are known for casting of simple rings and earrings (Petrie 1928: pl. 42: 3, 4).

Tell Abu Hawam – A green steatite mold associated with the Late Bronze Age for casting two ring bezels, an ox head pendant and two simple rings (Hamilton 1934: 58, fig, 359). Another LB steatite mold from this site was used for production of an attachment earring (Hamilton 1934: 34, fig. 206.

Hazor – A stone mold for casting an attachment earring and two beads, associated with Stratum XIV (Late Bronze II, Yadin et al. 1961: pl. 158: 31; and see Fig. 1: 2).

Samaria – A limestone mold for earrings was recovered in the first excavations at Samaria (Reisner, Fisher and Lyon 1924: pl. 68: n). One of the objects within the mold is a circle with 11 balls evenly spaced on the circumference and appears to represent a Type II.8a Earring (Fig. 11: 21-24). Another mold fragment of unspecified stone has an imprint of what appears to be a Type II.2 attachment earring (Reisner, Fisher and Lyon 1924: pl. 15: 35).

Tell Fakhariyeh in Syria – Two portions of a broken jewelry mold of mottled buff and gray stone showing four kinds of attachment earrings, two pendants and several decorated beads (McEwan et al. 1958: 50, 51, pl. 50: 1). Though found in an 8th–7th centuries context, the form of the earrings, all of which have the hoop opening at the top, appears to be characteristic of the Middle Bronze Age or especially the Late Bronze Age.

Tel Miqne-Ekron – A fragment of a mold made of black steatite, found on the surface of the tel (unpublished).

Tel Beth-Shemesh – Two mold fragments, one of which appears to be a fragment of a jewelry mold for a Type II.1b Earring (Fig. 9: 18-22), associated with Stratum IV, dated to the Late Bronze Age (Grant 1931: pl. 13; 1932: 30, pl. 47: 7, 8).

Ugarit – Several stone molds for Type II.6a Earrings (Fig. 11: 1-9) are mentioned by Maxwell-Hyslop (1971: 138) and a stone mold for production of a plate decorated with a rosette and two pomegranates is known from the eastern rooms of the Late Bronze archive at the site (Schaeffer 1962: fig. 61: K).

Various molds are also mentioned from Byblos, such as a steatite mold for various beads and Hathor heads (Dunand 1954: 209, pl. 102) and other molds are reported from Zinjirli (Andrae 1943: 22-25, fig. 16, pl. 8a) Kyunjik and Nimrud (Layard 1853: 597). The molds from Zinjirli, apparently of Iron Age II date, feature rosettes, rings and attachment earrings. Some of these molds could also have been used for the production of *repousée appliqués*, instead of casting.

47 In the examples cited here (see above n.43), some of the bead forms found carved into the molds are also found made in faience or glass.

Nearly all the stone jewelry molds found so far throughout the Levant are dated prior to the Iron Age II by their context or by the form and type of jewelry they were meant to have created. The objects carved into these molds consist of simple rings, decorated beads, attachment earrings and pendants. Most of these molds have several designs sculpted onto them, often on two sides, indicating production of several types of items. The attachment earrings found in these molds are always with rounded hoops that open at the top, indicating a Middle to Late Bronze Age date or at the very latest, a date in the Iron Age I (see section 7.1.2.). This observation, in addition to the fact that nearly all of the molds may be dated prior to the Iron Age II, suggests that mold manufacture was generally not in use by the Iron Age II. Thus, there is no clear evidence that direct casting of delicate jewelry items or use of the *cire perdu* method was practiced for jewelry production during the Iron Age II. This does not necessarily mean that casting of small items such as jewelry, whether in direct molds or by *cire perdu* did not take place but may suggest a different approach adopted by Iron Age II jewelers that opted for mechanical forming by other means. Technological advancements in the jeweler's craft, expanded use of sheet-metal, wire and granulation opened up new possibilities for the craftsman. Most solid metal jewelry items could be manufactured by hammering the metal into desired shape so that casting, which is often wasteful in raw material, need not be used.

Casting of finer jewelry items, especially those of gold, is generally not common as it is liable to be wasteful of metal and because high purity gold tends not to produce sharp clean castings (Williams and Ogden 1994: 28–29). Hammering, in addition to numerous other techniques discussed below, was usually the preferred technique to shape most gold and silver jewelry during the Iron Age II.

2.1.2.2. Plating

In plating, a thin layer of beaten-out silver or gold foil (see below section 2.1.2.5.) was used to overlay another substance, usually a less expensive material such as copper alloy, clay, bone or bitumen. When gold foil is used then this process is termed gilding. Gold can be beaten into extremely thin sheet of 0.005 millimeters (Lucas and Harris 1962: 231). Though this technique is primarily decorative, the final product may have served to create the illusion that the object was made of pure gold or silver. Plating thus serves an economical function in using a minimal amount of precious metal to cover an object of cheaper material. The cheaper process of gilding non-precious metal played an important role in the production of funerary jewelry in ancient Egypt (Müller and Thiem 1999: 75). Egyptian funerary depictions of the 11th Dynasty at Beni Hasan depict the use of thin gold foil to cover other objects. The accompanying hieroglyphs label this process as *redit nub er sesher*, or 'placing gold in order to gild' (Andrews 1990: 93).

The technique of wrapping a substance with thin gold or silver leaf or foil occurs already in the 4th millennium and continues well into the 1st millennium (Ogden 1982: 78).[48] The leaf or foil can be fixed to the object by some kind of natural adhesive, probably animal glue or resin (Ogden 2000: 160). Another way to attach the leaf or foil to the object is the application of heat and pressure, a process known as diffusion bonding. In this manner, gold and silver leaf may be bonded to copper (Lucas and Harris 1962: 232, 252; Ogden 1982: 80; Andrews 1990: 94).[49]

Another use of plating is to highlight certain areas of a jewelry piece. This is found in a pair of impressed sheet-silver Horus eyes from Tel Miqne-Ekron dated to the 7th century where the area of the white of the eyes is gilded (Golani and Sass 1998: 73, fig. 14: 8). Another example is a Horus eye amulet in faience with a silver foil-covered pupil from Ketef Hinnom, dated to the Late Iron Age II (Barkay 1986: 26 [English]).

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48 Locally, plating occurs as early as the Intermediate Bronze Age, such as a closed copper alloy ring covered with gold foil from a tomb at Assawir (Yannai 1996: fig. 8.4). Plating may be used on a wide variety of jewelry objects, such as gold plating (gilding) over a solid silver core on an earring of the Middle Bronze Age from Tell el-Farʻah (S) (Webb 1986: 28-29), silver plating on an ornamental disk or pendant of copper alloy from Hazor, dated to the Late Bronze I (Yadin et al. 1961: pls. 270: 30, 343: 38), silver plating with a chased design over a copper alloy ring from Tel Miqne-Ekron dated to the early 11th century (Golani 1996a: 44-45, fig. 10: 2), gold plating over two copper alloy lunate earrings from the Tawilan hoard dated to the 10th–9th centuries (Ogden 1995: fig. 8.25), a bead made of gold leaf over a bitumen core from Tomb Z VI at Akhziv, dated to the 10th–9th centuries (Dayagi-Mendels 2002: fig. 3.7: 13), silver plating on a copper alloy attachment earring from Tomb 14 at Tel ʽIra, dated to the 8th–7th centuries (Freud 1999: fig. 8.2: 6), silver plating over a clay bead from Tell Keisan, dated to the 7th century (Briend and Humbert 1980: pl. 95: 43), and a silver plated copper alloy fibula from Lachish, also dated to the 7th century (Tufnell 1953: pl. 58: 17). Not only jewelry was covered with gold or silver plate but also cultic items such as statuette of a bull from Ashqelon (Stager 1992) and numerous examples of cultic anthropomorphic statuettes (Negbi 1976).

49 However, in a later publication Ogden claims that attaching gold or silver foil to a copper-based metal by heat and burnishing is unlikely as the copper may develop surface oxides that would cause a detachment of the foil (Ogden 2000: 164). A lead gilding process has also been proposed, in which gold or silver is crushed with lead, applied to the copper alloy surface and then strongly heated, thus driving off the lead and leaving a thin layer of gold or silver. However, no examples of this technique have but been identified (Ogden 1982: 80). Another method could have been to dip the object in molten silver or gold (Ogden 2000: 165), though this appears wasteful.

2.1.2.3. Wire

Wire is an essential element in jewelry making. Many jewelry items contain wire in some form; whether for constructional or decorative purposes and some items may be entirely made of wire. Metal wire is made by several techniques but ancient pictorial and written records supply us with little or no clues as to how the wire was produced. Modern ethnographic parallels for manual wire production are unknown so that most of the evidence comes from microscopic examination and experimentation to attempt a re-creation of ancient techniques. Because most examples of wire in ancient jewelry are very worn, it is often difficult to ascertain the exact technique used. The following is a survey of the various techniques used for ancient wire manufacture (Carroll 1972; Oddy 1977) with an emphasis on those techniques identified in the Iron Age II.

2.1.2.3.1. Plain

Drawing – The regular method of wire production is by 'drawing', or pulling a rod of metal through successively smaller holes in a draw plate, thus making the rod longer and thinner. With annealing, or reheating the metal, to keep it soft and malleable, wire of extreme thinness and length may be drawn. Such wires are identified by long and straight streaks or scratches along their length. An intriguing object dated to the Late Bronze Age from Tell Abu Hawam, consisting of a stone block with two thin funnels running through it, may have been used for production of wire by this technique (see Fig. 2: 1; Hamilton 1934: 59, fig. 366). Most scholars, however, note that this method appears to have come into use only at the end of the Roman period (Ogden 1982: 46). Thus, identification of the drawing technique in wire earlier than this period is held to be a criteria for the identification of forgeries (Ogden 1982: 46) though Carroll (1970; 1972) claims that Egyptian craftsmen already used this technique during the Early Dynastic period.

Hammering – Metal wires probably originated as narrow cut ribbons of a malleable metal such as silver or gold used to bind together sheet-metal items.[50] A thickened ribbon is folded lengthwise and hammered into roughly rounded shape, then rolled between two flat surfaces to give a rounded wire. Hammered wires are characterized by a solid cross-section, elongated creases and faceted markings along their lengths. Type I.1 Earrings (see section 7.1.1. and Fig. 8: 1–6) could have been produced in this manner by hammering and rolling out the two ends of a wire until they taper, then bending the wire into earring form (see Webb 1986: 37). Hammered wires are common in antiquity, though this technique was usually reserved for wires over 1.5 mm in diameter (Ogden 1982: 48). In one of his earlier publications, Petrie remarked that all the gold wires he had seen were hammered (Petrie 1901: 25). It is generally assumed that nearly all early plain wires were made by hammering or by some method of twisting (Hoffmann and Davidson 1967: 36) an observation upheld by most examples of the Iron Age II in which the production technique may be identified.

Strip Drawing – One of the most common methods of wire production in antiquity involves pulling long thin strips through a small perforation (such as a stone bead), thus causing the thin strips to fold round into tubes (see Fig. 2: 2a). Most intriguing to the identification of this technique are stone beads with an oblong- or triangular-shaped perforation on both ends of the bead, locally found as early as the Intermediate Bronze or Middle Bronze Age II (see Fig. 2: 4; Zelinger and Golani 2005). As the perforation of stone beads always involves drilling that leaves a circular perforation through the bead (see below section 2.2.2.2.), an irregular, non-circular hole was made through excessive abrasion caused by pulling something through it. This may have been caused by a strip of metal that was drawn through the bead, thus cutting into the originally round perforation. Pulling long thin strips through a small perforation (such as a stone bead), causes the wire to become longer and thinner as the thin strips fold round into ever-tighter tubes (Fig. 2: 5). Pulling these tubes through successively smaller holes causes the tubes to tighten up and form a virtually solid wire of circular section. The technique of 'strip wire drawing' was in use in Egypt from at least the beginning of the 3rd millennium and continued to be used up to the Roman period (Ogden 1982: 48). In the Iron Age II, some wire examples bear elongated spiral creases or seams, a sure sign that some form of a twisting technique was employed though exact identification remains uncertain.

Strip or Block Twist – In this method, a long strip or block of wire is twisted around its own length (Fig. 2: 2b). Such twisted strips can be converted into solid round wires by rolling them between two flat surfaces or by drawing them through a small perforation such as a bead. This method was common in the ancient Near East from the middle of the 2nd millennium onwards (Ogden 1982: 51). Such wires exhibit an elongated spiral seam along their length. Research on Bronze Age Cypriot gold wire has indicated hammering and block twisting but not strip drawing (Oddy 1977: 85) and some of the gold wires in the royal Assyrian tombs at Nimrud of the 8th–7th centuries also

[50] In Exod. 39:3 is found a description of this: "they did beat the gold into thin plates and cut it into wires" (Jewish Publication Society translation).

appear to have been made by this technique. Strip and block twisting has also been identified on several gold jewelry items from Tell el-Farʿah (S), dated to the Middle and Late Bronze Age (Webb 1986).

Swaging – Thick wire may be made by hammering metal in a groove of an anvil or a punch. This method, termed 'swaging', produced wire of square, triangular or even polygonal cross-section. This technique is found in the beginning of the 2nd millennium in Egypt (Ogden 1982: 52). This technique can produce wire of square section for bracelets or shanks of semi-circular section for small and large rings, also found during the Iron Age II.

2.1.2.3.2. Decorated

Whether thick or thin, square or rounded, wire could be decorated in a number of ways.

Braiding and Twisting – Several wires could be braided or twisted along their length to give a spiral, rope-like effect (Fig. 2: 2c–d). Such ribbons of decorated wires were used to conceal soldered seams or to decorate small ribbon-shaped finger-rings during the Iron Age II (Part II, section 7.2.3.). Use of twisted wire is found in the construction of large rings during the Iron Age II (see Type I.3 Large Rings, Fig. 19).

Beading or Ribbing – In this technique, wire of round section is mechanically deformed by rolling it under a round or sharpened edge, thus producing a groove around its circumference, the metal being displaced to give a ridge on each side (Fig. 2: 3). If these grooves are placed close together along the length of wire, a beaded effect is produced. This technique was employed to decorate toggle pins and fibulae, in addition to small rings (Part II, sect. 7.2.1. and Fig. 15: 4). In ribbing, the wire is engraved or incised in short parallel lines along its length, producing small furrows that give it a 'fluted' effect.[51]

Though the beading and ribbing techniques are known from the beginning of the 2nd millennium in Anatolia, as for example on toggle pins, its use to decorate wire appears primarily from the time of the Egyptian New Kingdom. By the Iron Age, the technique was widely known throughout the Mediterranean (Ogden 1982: 53–54) and was used in the decoration of fibulae during the Iron Age II (see Stronach 1959).

Spiral Groove – In this method, a round wire rolled obliquely under a single edge produces a spiral groove along the length (Fig. 2: 4b).

2.1.2.4. Filigree

By this technique, thin wire is applied onto a metal surface to create a design that is soldered to the work (Lemaigre 1983; see Fig. 3: 1). This technique can employ plain or decorated wires, also of different gauges, applied to a flat or rounded surface. Use of this technique is found as early as the 3rd millennium at Ur in Mesopotamia (Woolley 1934: pl. 138) and in Egypt as early as the 12th Dynasty where it was commonly used by Egyptian jewelers, especially in *cloisonée* (see below section 2.1.2.10.). Locally, this technique is quite rare during the Iron Age, where it is so far known on a gold earring from the Tawilan hoard, dated to the 10th–9th centuries (Fig. 11: 18; Ogden 1995: figs. 8.3, 8.4, 8.17, 8.18) and on silver earrings from Iron Age tombs at the Halif Terrace (Fig. 14: 12–13; Borowski 1994).

2.1.2.5. Sheet-metal

The production of thin metal sheets from gold or silver is a necessary first step for construction of hollow metal jewelry items and Iron Age II metal jewelry such as earrings, pendants, amulets and beads often employ sheet-metal in their construction. Today, sheet-metal is produced by rolling mills. In antiquity, sheet-metal was made by hammering out a small quantity of metal, usually silver or gold, between layers of cloth or leather on a flat stone or a wooden block.[52] This was done using rounded stones or hammers that ease the metal downwards and outwards without cutting the surface. In hammering, the metal may harden due to buildup of internal strain. Malleability is regained by reheating and dipping in cold water, a process known as annealing.

The activity of beating out sheet-metal is depicted on almost every tomb of the Egyptian Old and Middle Kingdoms in which metalworking scenes are found (Fig. 3: 2–3) and is usually labeled as *seqer* or 'striking'. In the New Kingdom tombs of Wepemnefret and Ti, the wall paintings show two beaters of sheet-metal who describe the metal as 'cooking', an amusing reference to the fact that when beaten intensively, the metal can become hot to the touch (Andrews 1990: 86–87).

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51 However, casting may also produce both these effects.

52 Some examples of ancient Egyptian gold sheet from the Old Kingdom have been found to bear surface impressions of papyrus or leather (Ogden 1982: 34) while a flattened gold earring from Tell el-ʿAjjul exhibits signs of weaving on one side, interpreted as the result of the gold being covered by woven cloth during beating (Webb 1986: 42).

The thickness of the sheet-metal is usually dependent on its function in the jewelry piece. Silver or gold sheet made to cover another material was necessarily thinner than usual and is termed foil. Leaf usually refers to foil that is particularly thin and flimsy. Most silver sheet was hammered out to between 0.1–0.25 mm thick and gold can be made even thinner (Ogden 1982: 34).

Since tin snips or scissors were unknown until the Roman period, the sheet-metal was cut with knives or chisels, after which it could be bent, folded, rolled or punched into the desired shape.

2.1.2.6. Raised Sheet Work (*Repoussé*, Chasing)

Silver and gold sheet-metal can be impressed with wooden, bone or metal tools on one side in order to produce a relief decoration on the other side. The technique of working from the back of the piece is termed *repoussé* (Fig. 3: 4; see Destrée 1983).

In the *repoussé* technique, the simplest method involves fixing the sheet-metal on a cushion of soft material, such as bitumen or wax and then working the piece from behind (Fig. 3: 4a). For producing duplicates of a design, the sheet-metal is placed over a negative mold of wood or stone into which the design was carved. The sheet-metal would then be impressed or punched into this mold (Fig. 3: 4d). In the use of a positive mold, this process is reversed; impressing the sheet-metal over the mold in relief produces the design (Fig. 3: 4a–c). In a variation of this technique, sheet-metal is punched into a doming block with a hemispherical depression (Fig. 4: 1). This method is used to produce two hemispheres that are then soldered together to produce a hollow sphere, such as Type I.5 Metal Beads (Fig. 28: 9–10).[53]

The technique of working from the front of the piece is termed chasing. After the sheet-metal was impressed into the design, a chasing tool on the other (front) side highlighted the details. A chasing tool is a type of chisel with a small rounded edge that can indent the metal, but not incise it (Fig. 4: 2a, 3a).

2.1.2.7. Engraving and Incising

In engraving, a sharp metal tool is used to push into the metal, cutting out a sliver of metal like a furrow (Fig. 4: 3; and see Keel 1995: 129–135). In this way, clear and distinct designs were executed into a metal object. This technique was used to cut out a design intaglio (Fig. 4: 2b), as in the Egyptian-style hieroglyphs found cut into the bezel of rings (Fig. 15: 16, 20–21).[54]

In incising, a sharp metal tool is used to make a deep scratch in the metal (Fig. 4: 2b, 3b). This method demands less force than in engraving and thus allows the production of a more intricate design.

2.1.2.8. Granulation

Granulation is a decorative technique whereby small metal spheres of gold or silver are attached to a piece of metal jewelry in various two or three- dimensional arrangements. Granulation apparently originated in Mesopotamia during the Early Dynastic period (middle of the 3rd millennium) and the earliest examples of this technique occur in the royal cemetery at Ur in the form of simple rings made of a few granules (Maxwell-Hyslop 1971: 36–37). By the end of the 3rd millennium, knowledge of this technique had reached Ebla and Byblos (Maxwell-Hyslop 1971: 102; Kohlmeyer and Strommenger 1982: 120, Cat. no. 102) becoming common in the Near East during the Middle Bronze Age and onwards (see Lilyquist 1993: 31–51 for an inclusive chronological review). Granulation reached Egypt at the same time, but it is very rare in Egyptian jewelry. Most jewelry with granular decoration in Egypt has a rather un-Egyptian appearance and may actually be the product of foreign craftsmen. The Phoenicians used this technique in the decoration of earrings, rings and pendants (see Pisano 1974; 1987) and Etruscan artisans of the Iron Age II were able to produce astounding jewelry pieces that incorporated masses of hundreds, if not thousands, of granules (Nestler and Formigli 2004).

One of the earliest and simplest forms of granular decoration is of individual beads made by soldering five or more granules together in a ring. Such rings could be stacked one upon the other (Type I.1 Metal Bead; Fig. 28: 2–3, Part II, sect. 7.5.1.), making a cylindrical or tubular bead composed entirely of small rings of metal granules.

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53 Use of this method for production of closed hollow beads necessitates a small puncture in the sphere prior to the soldering process, otherwise the hot air trapped within the sphere may cause it to burst open. Use of this technique has been identified in the construction of hollow silver spheres attached to a Type II.6b Solid Lunate with Fixed Attachment Earring from Tel ʿIra (Fig. 11: 13-14) that is dated to the very end of the Iron Age (Freud 1999).

54 Engraved bezel designs may also be produced by casting, as found in a green steatite mold from Tell Abu Hawam (Hamilton 1934: 58, fig. 359). In this mold, the bezel was cast separately from the ring, the two apparently being attached at a later stage.

The granulation technique is complex and probably demanded years of experience by trial and error in order to perfect it. It was in widespread use from the Middle Bronze Age until the Roman period, but by the Middle Ages, it had been lost. Since then, numerous unsuccessful attempts to recreate it were done in the 19th and 20th centuries CE, but no single method is necessarily the only one used in the past (Wolters 1981; de Callatay 1983; Moorey 1999: 230–231).

The most likely method of producing the granules themselves involves the heating of small metal clippings or filings mixed in with charcoal powder). As the metal melts, its surface tension causes the pieces to contract into small spheres or granules (see Higgins 1961: 19; Carroll 1974: 33–34; Wolters 1981; Ogden 1982: 67; Callatay 1983 and Politis 2001: 167–169 for a discussion of other techniques). The resulting granules were then graded for size by sifting them through meshes of varying gauges and are then ready for use. A method still employed today by the jewelers of Luxor involves slowly dripping the molten gold into a wooden bowl from a height of about one meter. Under constant stirring, the molten gold breaks up into countless tiny balls that are then sieved and sorted into various sizes (Müller and Thiem 1999: 98).

Though several possible methods are possible, the most likely manner of attaching the granules onto a jewelry piece involved the use of 'colloid hard soldering' (Higgins 1961: 19–21; Aldred 1971: 99–100; Carroll 1974: 37; Ogden 1982: 58–70)[55] or also 'copper-salt reaction soldering' (Politis 2001). Colloid hard soldering requires precise control of the firing temperature and an advanced knowledge of the melting points of various metals. With the introduction of the bellows during the Egyptian New Kingdom, a better-controlled draft was available to fan the heat (Wilkinson 1971: 4) and thus better control the temperature.

The main principle behind the colloid hard soldering process is concerned with temperature control. The melting point of fine gold drops from 1063° C to 890° C when heated in contact with copper. A compound such as copper carbonate obtained from powdered malachite, for example, mixed with an organic glue or resin, may have been used as an adhesive and solder at the same time. This adhesive is applied onto the area to be decorated and the granules could then be glued on in various motifs that may include simple lines and circles, triangles, pyramids, lozenges and chevrons. During the course of heating, at 100° C, the copper salt (copper carbonate) turns to copper oxide and at 600° C the organic glue turns to carbon. Subsequently, at 850° C, the carbon and the copper oxide combine to form carbon dioxide gas which disperses leaving behind the copper, which at 890° merges with the base of the granule and the sheet-metal to create a soldered join (Figs. 4: 4, 5: 1; see Ward et al. 1981: 13). When heated, the solder would cause the granules and the gold surface to melt at their point of contact and form a join before the rest of the piece melts. The copper fused the parts together while the glue burned away, leaving the granules firmly soldered in place.[56] Another, similar method identified by Politis (2001: 165–166) involves using small chips of the chosen soldering alloy laid into position, then with application of flux and the necessary heat, the soldering alloy flows and the granule is joined to the metal. This method can be identified in simpler pieces by a thickened join area with a slight color variation.

Granulation is a complex technique that requires not only several manufacturing stages involving numerous components, but also demands a very high level of skill, experience and above all temperature control in order to produce a good piece of work. Politis sees granulation as a prestige technology adopted by the local elites throughout the eastern Mediterranean at its first appearance during the Middle Bronze Age (Politis 2001) and then becoming more common during the subsequent Late Bronze Age as a more international artistic style took hold as a result of developed trade and increased cultural contacts. Granulation was in use throughout the Iron Age I and II, but is more common at the end of the Iron Age II, primarily in the decoration of earrings and some forms of beads.

2.1.2.9. Joining

Many of the more complex jewelry items are composed of several parts connected by simple mechanical means such as folding, crimping, riveting, drilling, binding or even gluing. Use of many of these techniques is often masked by wear or by purposeful abrasion or decoration of the seams so that their identification is difficult, yet these techniques may often be detected by X-ray analyses (Webb 1986). An alternative way of connecting parts is

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55 This process was first recreated and patented by Littledale in 1934 and has proven to be very successful, primarily in joining gold and silver. Littledale himself named this process, though metallurgists prefer the term 'autogenous welding' or 'diffusion bonding'.
A similar process is used today by the jewelers of Luxor in which both the granules and the base plate are absorbed in carbon, which reduces the melting point at their point of contact from 1064° C to about 900° C. When the piece is then heated, the plate and granules fuse only at their points of contact. The granules preserve their spherical form, as their gold core does not melt. However, the plate and the granules must have the same gold content and thus the same melting point while the goldsmith also has to have good control over the firing temperature (Müller and Thiem 1999: 100).

56 A primitive, albeit reversed, use of this principle in ancient Egypt is known from the 4th Dynasty, when copper plates were soldered together using a silver alloy (Aldred 1971: 88).

by a variety of techniques involving heat. Two pieces of metal such as gold, may be joined together by heat and pressure produced by burnishing (Higgins 1961: 35). However, this method is not appropriate for delicate joints.

Relatively little research has been done on ancient soldering techniques. Most research has focused on techniques of the classical periods (see Lang and Hughes 1980). Solders are classified as hard or soft. A soft solder, usually composed of a mixture of lead and tin, is one in which the solder itself has a lower melting point than that of the pieces soldered together. Aside from isolated examples of Hellenistic date, use of lead or tin solder is virtually unknown prior to the Roman period (Lucas and Harris 1962: 253–254). A soft solder produces a weak joint and is unfit for nothing but the cheapest jewelry (Higgins 1961: 34).

Hard soldering for major joins and was practiced in Mesopotamia since the 3rd millennium (Higgins 1961: 34–35) and in Egypt since the 4th Dynasty (Ogden 2000: 159). In this process, an alloy of silver and copper, or an alloy of silver and gold was used as a soldering agent along with a flux. This process is similar to the colloidal hard soldering process described earlier, except that in the hard soldering process the alloy itself is a solder. As the hard soldering and the colloidal hard soldering process are virtually undetectable, use of these methods in ancient jewelry manufacture therefore remains largely unproven.[57] Microscopic examination of gold artifacts of the Middle Bronze, Late Bronze and Early Iron Ages from Tell el-Farʿah (S) in which some form of hard soldering must have taken place revealed the recurring presence of cuprite corrosion where a soldered join is to be expected. This suggests the use of a copper-based alloy within the solder or the inclusion of copper within the gold (Webb 1986). As early as the Middle Kingdom, Egyptian goldsmiths were using a copper-based solder and were able to work with solders of different colors and melting points by mixing the copper with different amounts of gold or silver and using natron as a flux to improve the fusion of the metals (Andrews 1990: 88). Some Egyptian funerary depictions of workshop activity, especially those from the New Kingdom tomb of *Rekh-me-re*, appear to represent the soldering process when they depict an artisan sitting at an individual brazier holding his work by a pair of tongs in the fire and directing the heat by means of a blowpipe to the relevant point on the piece.

Another means of joining is by sintering, also referred to in the literature as fusing or sweating. In this method, the two pieces of metal are heated to just below their melting point, but without reaching the temperature at which the bulk of the metal liquefies. This method was probably the most difficult to master as the degree of skill, experience and temperature control needed to fuse the two pieces together without melting them completely is very high. In addition, the metals have to be of the same composition of alloy; otherwise, one might melt before the other. It is unclear what specific methods local jewelers employed during the Iron Age II, a question that only laboratory analyses may one day answer.[58]

2.1.2.10. *Cloisonnée*

Cloisonée is a technique whereby inlays of semi-precious stone, glass or any glazed composition were inset into metal, the inlays usually fitted into place within openwork cells made by thin portions of wire or sheet-metal strips that form 'boxes' or *cloisons*. This technique is well-known in Egypt as early as the 4th Dynasty (Andrews 1990: 88) and is one of the distinguishing hallmarks of Egyptian jewelry.

This technique is sometimes found in Late Bronze Age jewelry, such as from Lachish (Tufnell, Inge and Harding 1940: pl. 36: 102; Tufnell 1958: pl. 25: 9) and Megiddo (Loud 1948: pl. 225: 12–13) but is very rare in jewelry of the Iron Age II. One example is known on a silver ring with glass inlays from Meqabelein, dated to the 7th–6th centuries (Fig. 16: 7; Harding 1950: pl. XV: 6). In Assyria, fine examples of *cloisonée* jewelry were found at Grave 45 at Assur of the 13th century (Haller 1954: pl. 28b). The royal Assyrian tombs at Nimrud of the 8th–7th centuries (Damerji 1998; 1999) have beautiful examples of *cloisonée* on bracelets and the *cloisonée* technique continues in Persia during the Achaemenid period (Moorey 1998). The technique reached Assyria and Persia only nearing the end of the 2nd millennium, probably through contact with or production by Egyptian craftsmen.

2.1.2.11. Finishing and Polishing

After fabrication, metal jewelry often requires some work to remove tool marks, surplus solder, overlaps and other disfigurements such as oxides and encrustation produced by soldering. However, wearing and age invariably mask any definite signs of ancient finishing and polishing methods. Most finishing operations probably involved scraping

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57 One of the reasons for this is that gold or silver, when buried in the ground for long periods, undergoe a process termed surface enrichment. In this natural process, the soil tends to dissolve the alloying metals, leaving only the gold or silver. The solder is thus changed into a pure or nearly pure metal, making its presence virtually undetectable (Higgins 1961: 36).

58 Recently a Type II.4 silver earring from Tel Miqne-Ekron (Fig. 10: 17) was submitted to Dr. Michael Notis of Lehigh University for physical laboratory analyses. One of the aims of this examination is to determine what specific joining techniques were employed in its manufacture that included soldering in addition to granulation.

in order to remove surplus solder and unwanted tool marks. Polishing agents were certainly also used to remove or mask disfigurements, in addition to giving the jewelry piece shine and luster. These may have been some form of abrasive powder, which could be made of iron oxide, crushed pottery or clay, chalk or other forms of calcite. Ground pumice, charcoal or sand which, when mixed with some type of oil or liquid resin, could have been used as a scrubbing agent (Ogden 1982: 86–87). Chemical cleaning or 'pickling' was needed in order to remove oxides and encrustations. Today, soaking in diluted sulfuric acid does this, but other substances were employed in antiquity (Williams and Ogden 1994: 29). Various ancient Roman pickling recipes are known (Ogden 1982: 87) and these usually involve vinegar, alum, brine, and urine. Besides removing any oxidation, lengthy pickling will also remove impurities. For silver and gold, pickling may serve to clean the metal and improve its color.

2.1.3. Discussion

From the earliest period of their discovery, metals were employed in the manufacture of jewelry objects. This is especially true of gold, due to its non-corrosive quality. The unique colors of gold, silver and electrum lent them a singular symbolic significance, rendering them valued substances not only because of their rarity, but also for their inherent qualities. In addition, the malleability of silver and especially gold made them preferable for the production of nearly all types of jewelry objects throughout the Bronze and Iron Ages.

Copper alloy was also a common material in jewelry manufacture, even prior to its widespread use for tools and weapons (see Esin 1993). Copper alloy is a cheaper substitute for gold or silver and is often plated with silver or gold foil or sheet in order to imitate precious metal jewelry.

All these metals were used for jewelry manufacture during the Middle–Late Bronze Ages and the Iron Age I. The majority of Iron Age II metal jewelry was made of copper alloy, the remainder of silver and even less of gold and electrum. Silver largely replaced gold as the favored precious metal in jewelry manufacture during the Iron Age II, although this was not necessarily a deliberate choice, but more likely the outcome of long-term changing political and economic realities (see below section 2.6.2.). The use of iron is relatively rare in jewelry, first appearing during the late Iron Age I, when iron was first used for tools and weapons in this region (e.g. Petrie 1930: pl. 30: 114, 118, 119, 139; Loud 1948: pl. 226: 7; Waldbaum 1980; 1999). Iron is very difficult to work, oxidizes quickly and thus is applicable for only the most simple and basic forms. It was occasionally used to produce small and large rings, though it was hardly ever used for the manufacture of earrings, for example. Examples of large iron rings are common in habitational levels and tombs of the Iron Age II, as at Lachish (Tufnell 1953: pls. 54: 61; 55: 9–10) and Megiddo (Lamon and Shipton 1939: 86: 6, 10). Tufnell noted that at Lachish "iron was seldom used for bangles [after] 800 BCE, either because it became unfashionable after the first novelty of the metal had waned, or because economic and military necessity diverted supplies to the manufacture of weapons" (1953: 389).

Working metal into jewelry involved a broad range of techniques. During the Late Bronze Age, widespread trade networks and creation of an international artistic style (Feldman 2006), accompanied by movement of craftsmen and the transmission of ideas and knowledge, diffused metalworking technology throughout the Near East and the western Mediterranean (Caubet 1998).

In the southern Levant, until the end of the Middle Bronze Age, metal jewelry was restricted to a limited number of simple forms exhibiting only basic manufacturing techniques.[59] It was only from the end of the Middle Bronze Age, with the local advent of granulation, in addition to advanced techniques of forming, soldering, wire-making and decoration that more sophisticated forms began to appear. These techniques became firmly entrenched during the Late Bronze Age and all of them continued into the Iron Age. However, local Canaanite jewelers of the Late Bronze and Iron Age I still never reached the same technological level as their Egyptian counterparts and some classic and well-developed Egyptian techniques, such as *cloisonée*, are nearly absent in the local manufacturing repertoire of the southern Levant.

Towards the end of the Iron Age II and into the Persian period in the southern Levant, the technology of fine metalworking developed rapidly and local manufacturing products became more refined and complex. Though granulation appeared locally at the end of the Middle Bronze Age, it was only mastered by local craftsmen towards the end of the Iron Age II, when elaborately decorated earrings were produced (for example, see Part II, sect. 7.1.2, 3.–7.; Earring Types II.1a, II.4–5, 6b and VII.2; Figs. 10: 1–17, 11: 17–22, 12: 11–17, 15: 12–17).[60]

During the Bronze Age, a recurring characteristic of Type II Earrings is their production as a single piece by casting, as is evident from the discovery of local molds for Earring Types II.6a and II.1b (see, for example, Fig. 11:

59 A prominent exception are the hoards of gold jewelry from Tell el-ʿAjjul (see Negbi 1970). However the jewelry in these hoards is not representative of what is usually found from this period.

60 An exception to this is the exquisite collection of gold jewelry from Tawilan in Jordan of the early Iron Age IIA, which included wire and granulated decoration that is unparalleled in its sophistication at other local sites of the period.

10). Such molds do not appear to have continued into the Iron Age I–II. At the end of the Iron Age I, and especially during the Iron Age II, technological advances in forming (e.g., increased use of sheet-metal and forming on a doming block), and especially soldering, enabled the manufacture of earrings from several parts, as well as the extensive use of wire and granulation for decoration. Improved wire-production techniques enabled thinner, longer and stronger wires and the creation of more delicate and complex designs. After the 8th century, sheet-metal was commonly used for forming jewelry and wire for decoration. Sheet-metal enabled the creation of larger pieces using less material. At the same time, casting appears to have become less common, reserved primarily for the production of large rings, though these could also have been fashioned by hot or cold forging. Towards the end of the Iron Age II (7th century) and into the Persian period, some jewelry, especially earrings, were truly sophisticated creations of complex construction making use of several techniques such as sheet-metal and wire, forming on a doming block and soldering together of the various components. The numerous soldered joints necessitated extensive decoration with granules and wire to strengthen and mask them. Examples of elaborate silver earrings are found in the 7th century hoards from Tel Miqne-Ekron (Figs. 10: 11–13, 15–16; 11: 17, 21), the 6th century earrings from Ketef Hinnom (Fig. 9: 7–8, 17), the 6th century earrings from Tel ʿIra (Fig. 11: 13–14) and the silver earrings from Kamid el-Loz of the Persian period (Fig. 9: 1, 4–5, 9–10).

2.2. Stone

Semi-precious and other stones were commonly used in the production of beads, though pendants, amulets and small rings were also fashioned from stone. In addition, colored stone was used as an inlay, oftentimes with another material, such as metal. The most relevant property of stone was its color, texture and translucency that often bore symbolic meaning that was magical as well as medical (Clark 1986: 65ff.). Hardness was significant primarily to the craftsman and scarcity or availability was only of secondary importance (Boardman 1996: 7–8).

2.2.1. Materials and Sources

Egyptian and Mesopotamian texts as well as the Old Testament name numerous types of stones, but the exact type of stone is difficult to identify. Different stones were named according to their visual and cultic attributes. In the Egyptian Book of the Dead, funerary jewelry demanded specific stones prescribed for the magical properties of their color (Andrews 1990: 37). As the influence of Egyptian culture and religion was significant in the Canaanite culture of the Late Bronze Age, Egyptian customs may have continued to some degree into the Iron Age I and Iron Age II as well.

In this study, identification of the specific type of stone is reliant on that given in the various publications. Material identification of previously unpublished material has been done by the naked eye only. Confusion as to the identification of the stones is rampant throughout the literature, so that only an in-depth mineralogical study encompassing hundreds and thousands of objects, at present beyond the scope of this study, would provide more reliable data. The following is a review of the more common types of stones used in jewelry manufacture during the Iron Age II in the southern Levant.

The overwhelming majority of the stones used in the manufacture of beads and pendants during the Iron Age II are of the quartz family that includes several semi-precious stones, such as carnelian, agate, rock crystal, amethyst, jasper and chalcedony, all of which register a hardness of 7 on the Mohs scale. These are discussed in the following section.

2.2.1.1. Carnelian

Carnelian (also termed cornelian) is a translucent form of microcrystalline quartz (silicon dioxide) of reddish color, due to the presence of iron oxide (Clark 1986: 70). Its sheen and color, ranging from red-brown or orange to a red-tinged transparency, made it very popular for use throughout the ancient world (Tosi 1976–80a). In the Iron Age I–II levels at Tel Miqne-Ekron, carnelian accounts for 77.4% of all the stone used in the production of beads and pendants (Golani forthcoming A). A very close and virtually indistinguishable relative of carnelian, sard, whose name may derive from Sardis in Lydia (Moorey 1999: 96), is of similar composition but is opaque and has a darker red-brown color. Carnelian is commonly found in the eastern desert of Egypt, Iran, India and various parts of Europe in the form of water-worn pebbles (see Lucas and Harris 1962: 391–392; Andrews 1990: 41; Keel 1995: 144–145; Aston, Harrell and Shaw 2000: 26–27; Spaer 2012: 507).

In Western Asia and Egypt, carnelian was one of the earliest stones used for the manufacture of jewelry. It was highly valued in antiquity, used primarily in the manufacture of beads and amulets. From the time of the Egyptian

New Kingdom, it was also used in the manufacture of small rings and inlays. For the ancient Egyptians, the color red was not only connected with blood and hence life and energy, but was also linked to the evil-tempered desert god Seth, patron of disorder, storms, aridity and the murderer of his brother Osiris. In the Egyptian Late Period, the name for carnelian, *herset*, also meant sadness (Andrews 1990: 39; 1994: 104) while sard was distinguished by the addition of the term *desher*, meaning red (Andrews 1990: 50). Even into the 20th century CE, local Arab villagers considered carnelian to be effective in the treatment of opthalmic diseases (Macalister 1912b: 104). The Sumerians, who probably obtained carnelian from Iranian or Indian sources, termed it *sāmtu*, an item often noted in accounts of traded items (Moorey 1999: 97).

Imitations of carnelian may be made from glass and faience, which have an added iron compound to produce the reddish color. Carnelian is also imitated in the use of red paste in inlays. However, during the Iron Age II as well as in earlier periods, red is one of the rarest colors imparted to faience and glass. Despite the fact that a red color could easily be produced, carnelian itself was rarely imitated. It is unclear whether this occurred; because of a relative plenty of carnelian or any other reddish stone or whether the color was generally not imitated due to other, possibly symbolic reasons.

2.2.1.2. Agate

Agate is also a variety of microcrystalline quartz. The term is inclusive of onyx and sardonyx which consist of colored bands or layers of concentric black or dark brown stripes or reddish-brown to red stripes, separated by gradations of white or grey (Keel 1995: 145; Aston, Harrell and Shaw 2000: 26–28). For this reason, agate is often found used in the manufacture of large or long beads and pendants so that the natural coloring effect is more prominent. Pebbles of agate are plentiful in Egypt, Arabia, India, northern Iran and Sicily. They are also found in southern Israel (Negev), Jordan and southern Iraq (Andrews 1990: 39; Ogden 1982: 109). In the Iron Age I–II levels at Tel Miqne-Ekron, agate composed 7.5% of all the stones used in the manufacture of beads and pendants (Golani forthcoming A).

Agate was used in Egypt since the beginning of the 3rd millennium, but its use in jewelry was always limited (Andrews 1990: 39). The Egyptian term for this stone is thought to be *ka*, from which both light and dark varieties (*hedj* and *kem*) are differentiated, possibly corresponding to onyx and sardonyx (idem).

Mesopotamian cultures probably procured agate from Iran or India, though Turkey is also a likely source (Moorey 1999: 99). The Neo-Assyrians were particularily fond of agate which comprises over 50% of the published Neo-Assyrian votive beads with royal inscriptions (Galter 1987: table 1). The popularity of this stone in Neo-Assyria is also expressed by their ability to produce imitations or fakes of banded agate consisting of chalcedony stone, artificially stained by organic materials, thus creating the impression of banded agate (Oppenheim 1966; Sollberger 1987). In the southern Levant, the development of colored trail decoration on elongated glass beads (see below section 2.5.2.2.) may also be an attempt to imitate banded agate, which was more difficult to work and more expensive than glass.

2.2.1.3. Rock Crystal

Rock crystal is a macrocrystalline quartz which can appear as a colorless, nearly transparent stone. Another form of this stone is translucent and milky-white in color and is termed milky quartz. The sources for this stone are widely distributed and include southern Egypt, Syria, Cyprus (near Paphos) and Turkey (Lucas and Harris 1962: 402–403; Oliver 1973; Tosi 1980–83; Rova 1987; Aston, Harrell and Shaw 2000: 52; see also Pliny *Natural History* Book 37: 9–10). Use of rock crystal in beads, pendants and inlays is known from Western Asia from the 6th millennium and also from Pre-Dynastic Egypt where it was later termed *menu hedj* ('white quartz'; Andrews 1990: 50; Moorey 1999: 95). Quartz stone is also listed as tribute brought from Syria. Though the stone is brittle and hard to work, its transparent shine and luster made it a favorite for jewelry manufacture throughout the ancient Near East.[61] In the Iron Age I–II levels at Tel Miqne-Ekron, rock crystal comprised 3.1% of all the stones used in the manufacture of beads and pendants.

2.2.1.4. Amethyst

Amethyst is a translucent macrocrystalline quartz that bears a glassy sheen and ranges in color from a deep purple to a nearly transparent purple-tinged variety (Ebeling and Meissner 1938: 266–273). This stone may be commonly found in southern Egypt (Lucas and Harris 1962: 388–389; Andrews 1990: 40; Keel 1995: 142–143; Aston, Harrell

[61] In Mesopotamia, rock crystal is among the recurring stones found in foundation deposits (Moorey 1999: 95) suggesting an unknown significance that may have been imparted to this material.

and Shaw 2000: 49–52) where it was used as early as the Pre-Dynastic period (Ward 1978). The Egyptians termed the stone *hesmen*, but seldom used it. In Mesopotamia, amethyst is used already in the 4th millennium for beads and pendants, later becoming more common during the second quarter of the 1st millennium (Tosi 1980–83: 247; Moorey 1999: 94). In a jewelry cache from Enunmah at Ur dated to the Early Dynastic period, at least 30 amethyst beads were found (Woolley 1962: 106–108, U. 457–500). The reason for the growth of amethyst use in the Neo-Assyrian and Babylonian periods may be due to increased trade contacts with Egypt as a result of the growth of the Neo-Assyrian empire. However, based on 4th millennium amethyst found at Tepe Gawra in Iran (Tobler 1950: 192) and sporadic finds elsewhere in the Mesopotamian region, Moorey has suggested a closer origin in the Anatolian highlands or Iran (1999: 94), in addition to an Egyptian source.

2.2.1.5. Jasper

Jasper is a coarse macrocrystalline quartz. It is opaque and can be uniform in color or speckled or blotchy. It occurs in a number of colors, including red, green and yellow and is frequent throughout the Near East; such as the eastern desert of Egypt, India, and Afghanistan (Tosi 1976–80b; Aston, Harrell and Shaw 2000: 29–30). In Egypt, red jasper was in use since Pre-Dynastic times (Lucas and Harris 1962: 397–398; Ogden 1982: 108–109) and in Chapter 156 of the Book of the Dead, red jasper is specifically prescribed for the Girdle Tie of Isis amulet (Andrews 1990: 45) and as a protection against illness for the newborn (Winter 1999: 50). Jasper, particularily the red variety, was used for beads, pendants, amulets, scarabs and inlays, and in the New Kingdom, for pennannular earrings as well (see Part II, sect. 7.1.5., Type V.1 Earrings of the Late Bronze and Iron Age I). The Assyrians also used jasper stones to dispell sorcery (Winter 1999: 51).

Khenmet, the Egyptian word for red jasper, is derived from the verb *hnm*, 'to delight', linking this stone with the positive aspect of the color red (Andrews 1994: 103). Yellow jasper was not used at all before the New Kingdom and even then very sporadically (Lucas and Harris 1962: 398; Andrews 1990: 46). A few examples are locally known in the Late Bronze II, such as a Type II.4a Stone Bead (Fig. 29: 11–14) from Tel Beit Mirsim Tomb 100 (Golani 2004: 199) and in the Iron Age I as well, such as a Type II.8 Stone Bead (Fig. 29: 26–27) from Stratum V at Tel Miqne-Ekron (Golani forthcoming A) and a Type II.2 Stone Bead (Fig. 29: 3–7) from Tel Ashdod Stratum XIII (Golani and Ben-Shlomo 2005: 253, 259). No examples of yellow jasper are known from the Iron Age II. At Tel Miqne-Ekron, only three beads of jasper (two red and one yellow) are known from the Iron Age I–II levels, comprising 1.9% of all the stone beads and pendants from this site (Golani forthcoming A). Green jasper was in use as early as the Pre-Dynastic period; its Egyptian term may be *nemehef*, the green stone prescribed in Chapter 30 of the Book of the Dead in order to fashion the heart scarab that was employed to ensure safe passage to the afterlife (Andrews 1990: 46). For the Egyptians, green was the color of vegetation and fertility, new life and possibly resurrection. Green jasper has also been found along the shores of the Dead Sea (Perrot and Chipiez 1885: 633). During the 2nd millennium, green jasper was a favored stone for seals and the possibility of a seal carving workshop at Sidon has been suggested for a number of green jasper seals from the Levant (Collon 1986b; 2001a; Keel 1995: 143–144).

2.2.1.6. Hematite and Goethite

Hematite is a naturally occuring iron oxide appearing as a reddish to black opaque stone with a lustrous metallic appearance and registering 5.5–6.5 on the Mohs scale,. It is found in the region of Syria, Egypt and Turkey (Lucas and Harris 1962: 395; Moorey 1999: 84; Keel 1995: 141; Aston, Harrell and Shaw 2000: 38). Similar to hematite, goethite is also an iron oxide of dark color with yellow streaks as is magnetite, a magnetic iron oxide of brown-black color with black streaks. In Egypt, hematite was apparently termed *bia*, meaning iron, a reference to its metallic appearance. Throughout Western Asia, it was commonly used for larger objects such as seals and pendants in addition to mace heads and weightstones from the 5th millennium onwards (Ogden 1982: 99; Andrews 1990: 43–44;, for weights see for example at Megiddo [Loud 1948: pl. 168]) but hematite was generally not used for beads as its hardness made fine working of the stone difficult. This stone was attractive because it could take on a lustrous gray-black to reddish polish. Pliny the Elder relates that hematite was good for bloodshot eyes and for checking excessive menstruation, internal bleeding, bladder problems and as a cure for snakebites (Pliny *Natural History* 36: 37: 145).

The following stones were sometimes used in the production of beads and pendants during the Iron Age II, but were not common.

2.2.1.7. Green Malachite

Malachite (copper carbonate) is a soft opaque stone (4 on the Mohs scale) of green color with a sheen exhibiting light and dark zones of color (Weisgerber 1990). Malachite comes from the same regions in which copper is found such as the Sinai, Timna, Feinan, the eastern deserts of Egypt, Nubia and Anatolia (Lucas and Harris 1962: 401; Aston, Harrell and Shaw 2000: 43–44). In Egypt, beads were manufactured from malachite already during the 1st Dynasty (Andrews 1990: 48) and malachite was used for production of the earliest beads and pendants in Mesopotamia (Moorey 1999: 92). Throughout the southern Levant, malachite was used for beads, amulets or as an inlay though it was more often ground down to make green pigment or refined for its copper content (Lucas and Harris 1962: 400–401). The Egyptians termed this stone *shesmet,* but because of its green color and its symbolism with life and resurrection, the stone was also termed *wadj* (green), along with other green stones (Andrews 1990: 48). Pliny the Elder states that malachite was used (as an amulet?) to protect children from danger (Pliny *Natural History* Book 37: 36).

2.2.1.8. Turquoise[62]

Turquoise is an opaque pale sky-blue or blue-green copper-based aluminum phosphate found alongside copper ore as compact lumps or as filling in the cracks of rocks. Because the blue-green variety is similar to malachite, the two are often confused and malachite has been referred to as 'turquoise matrix' (Lucas and Harris 1962: 401). Turquoise is native to Sinai (Lucas and Harris 1962: 404–405; Aston, Harrell and Shaw 2000: 62–63) and deposits are known from Iran and Afghanistan (Tosi 1974: 148). In Akkadian, turquoise was apparently termed *ashgikû*, and in Mesopotamia, the stone was used in jewelry as well as being imitated in glass and pulverized for medicinal purposes (Moorey 1999: 101).

The Egyptians were particularly fond of blue-green turquoise, which they termed *mefkat* and distinguished it from siliceous imitations by addition of the determinative *maa* or true (Andrews 1990: 51–52). In the Late Dynastic period, *mefkat* is also a synonym for 'joy' and 'delight'. The color of turquoise was highly prized and it is often mentioned alongside lapis lazuli in lists of valuable materials. Turquoise was sometimes used for beads and amulets, but more commonly for inlays. Pliny noted that no other stone sets in gold so well and further added that no other gemstone is more easily imitated by siliceous materials (Pliny *Natural History* 27: 33: 3ff.).

Despite the proximity of turquoise in Sinai, very few turquoise objects are found in the southern Levant, indicating that Egyptian mining of this mineral was destined for Egypt and not exported eastwards (Beit Arieh 1980: 56ff.). In Mesopotamia, exploitation of Iranian and Afghan sources continued until the beginning of the 3rd millennium yet some have argued for exploitation of a different source in Central Asia, prior to the 3rd millennium (Tosi 1974: 148–150, 159). After this time, use of turquoise in Western Asia drops significantly, the reasons for which are unclear. There is little or no recorded use of turquoise during the entire Iron Age, though some examples are found in the Neo-Assyrian royal tombs at Nimrud (Roaf 1990: 165). Tosi (1974) has postulated the reason for this as a conscious rejection of green stones but Moorey (1999: 103) has suggested that the difficulties in procurement and working of turquoise from the same places where it is found alongside of copper simply made use of cheaper substitutes more attractive.

2.2.1.9. Feldspar

Feldspar, also termed Amazonite, is an opaque green or blue-green potassium aluminum silicate. Highly prized by the Egyptians for its color, feldspar or *neshmet*, was often listed along with lapis lazuli and turquoise in lists of valuable materials (Andrews 1990: 41–42). The stone was in use since Pre-Dynastic times and is prescribed in the Book of the Dead as the material from which to make papyrus amulets. Feldspar is an alternative green stone for heart scarabs and was frequently imitated in glass, often necessitating the determinative *maa* (true) to differentiate it from its imitations. Feldspar originates in the eastern deserts of Egypt and in Libya (Lucas and Harris 1962: 393–394) in addition to alleged sources to the north and east of Mesopotamia (Moorey 1999: 82–83) which were in use during the Ubaid period (Woolley 1956: 8, 67).

2.2.1.10. Garnet

Garnet is a magnesium aluminum silicate of translucent red color with a violet or brown tint, generally found as small, alluvial pebbles. It is plentiful in southern Egypt, in the eastern desert and in Sinai (Lucas and Harris 1962: 394–395; Andrews 1990: 43; Aston, Harrell and Shaw 2000: 31–32). The Egyptians were using garnet as early as

[62] The name of this stone is possibly derived from the name Turkey, from which supplies of turquoise reached Europe (Moorey 1999: 101).

the Pre-Dynastic period, terming it *hemaget,* but because of the small size of the raw material, its use in the production of jewelry and inlays was very limited. Garnet was in limited use in Mesopotamia during the 1st millennium (Moorey 1999: 83).

2.2.1.11. Serpentine

Serpentine is a magnesium silicate that is easily carved (registering 2–5 on the Mohs scale) and has an opaque to semi-translucent color ranging from dark green to black that often appears with lighter colored snake-like veins. In Egypt this stone is found in the eastern desert and has been used to produce beads as early as the Pre-Dynastic period. Serpentine was also used in the manufacture of pendants, cylinder seals, scarabs, amulets and heart scarabs (Andrews 1990: 51; Aston, Harrell and Shaw 2000: 56–57). In Egypt, the pattern of its veining was used for amulets to ward off snakes and scorpions (Wilkinson 1994: 87). Serpentine may possibly be identified with *sehert*, one of the stones prescribed for heart amulets in the Book of the Dead. Serpentine also occurs in Mesopotamia (Moorey 1999: 100–101). Pliny the Elder mentions two types of serpentine: a white and soft variety and a dark and hard one, that when worn as amulets, were good for the relief of headaches and as a cure for snakebite, delirium or a coma (Pliny *Natural History*, Book 36: 11: 56).

2.2.1.12. Steatite

Steatite, the compacted form of the mineral talc, is a magnesium silicate that is easy to carve (registering only one on the Mohs scale) and for this reason is often the preferred stone for scarabs. Also called soapstone, steatite has a greasy or soapy feel (hence its name) and ranges in color from cream white to gray and black. The soft nature of this stone resists cracking when exposed to high temperatures and is easily carved and shaped, making it a favored material for the manufacture of jewelry molds (see above section 2.1.2.1.). A cream white to gray variety of steatite is found in the eastern desert of Egypt and in the region of Aswan where it has been exploited intensively since the Pre-Dynastic period, especially for beads, which were often glazed green (Lucas and Harris 1962: 421; Andrews 1990: 51; Aston, Harrell and Shaw 2000: 58–59). A reddish form of this stone is found in Mesopotamia (Ogden 1982: 110) while a dark green to black variant is found in Syria and northern Mesopotamia, where it has been used for beads and seals from prehistoric times into the 1st millennium (Moorey 1999: 100).

2.2.1.13. Diorite

Diorite is a hard igneous rock of speckled white and black color that may be polished. The stone occurs near Aswan in Egypt (Aston, Harrell and Shaw 2000: 30–31) and was used for pendants and beads as early as the Pre-Dynastic period. The Egyptian term for diorite may have been *mentet* and this stone was also commonly used for sculptures and ceremonial vessels (Andrews 1990: 41). Diorite also occurs near the Persian Gulf (Moorey 1999: 82).

2.2.1.14. Lapis Lazuli

Lapis lazuli is one of the best known and most easily recognized precious stones in the ancient Near East, synonymous with gleaming splendor, the divine heavens and an attribute of gods (see von Rosen 1990; Brown 1991). The deep blue color of the stone, often speckled with white or yellow inclusions, is what gave it an aesthetic appeal and cultic significance, imparting strong protective powers (Clark 1986: 67–69; Winter 1999). Lapis is a sulphur-containing sodium-aluminum-silicate of opaque dark blue color often streaked with white and flecked with iron pyrite (fools gold) and white calcite impurities that registers 6 on the Mohs scale. It occurs as lumps in marble rock that has to be broken up in order to retrieve it.

In Egypt, lapis was in use since the Pre-Dynastic period and remained popular until the Late Period for beads, pendants, seals, amulets, scarabs and inlays (Lucas and Harris 1962: 398ff.; Andrews 1990: 47–48; Keel 1995: 145–146; Aston, Harrell and Shaw 2000: 39–40). The source of lapis in the ancient Near East is generally agreed as to be in far-off Afghanistan, arriving in Egypt as lumps of raw material (Sarianidi 1971). Lapis was considered very precious but unlike gold, it could not be melted down and reused and was often recycled by the production of smaller objects from earlier, larger ones.[63]

Of all the precious stones used by the Egyptians, lapis lazuli was the most prized of all, as the color symbolised the all-embracing protective sky at night with all the stars. In Egypt, lapis is noted immediately after gold and silver

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63 The recycling of lapis lazuli has been identified in the steady reduction in size of lapis cylinder seals during the 3rd millennium and in their reuse as beads (Herrmann 1968; Collon 1986a: 101).

in lists of valuable materials and was imitated in glass or glazed composition so much that the determinative *maa*, meaning 'true' had to be appended to the term *khesbed* (lapis lazuli) in order to denote the real thing.[64] Similarily, the Akkadians also differentiated between 'lapis lazuli from the mountain' and its imitation in glass '…from the kiln' already in the latter half of the 2nd millennium (Moorey 1999: 90).

In Mesopotamia, the Akkadian term *uqnû* is generally agreed to denote lapis, though other terms are also known that carefully distinguished between its different qualities (see Röllig 1983). The variety of Akkadian terms stands in contrast to the much more limited repertoire in Egyptian, to where lapis was imported from far away. This implies a broader variety of meanings and uses imparted to the stone by the Akkadians, who were closer to its source. Lapis in Mesopotamia was used not only in jewelry objects but also in other functions, as the prestige and value of lapis provided it with a special cultic role such as in foundation deposits (Ellis 1968).

Besides being a divine symbol, lapis for the Egyptians also possessed protective properties and the wearing of lapis seals or beads by mortals and by the gods invoked protection (Winter 1999). Lapis was used as potent protection for the newborn against illness, while for the Assyrians, lapis was used in curing rituals in order to counter impotency (Winter 1999: 50–51).[65]

Local finds of lapis are very meagre; the demand for this material by the Egyptians and the overland trade needed to get it to Egypt largely bypassed the southern Levant, probably by way of the seaports located on the Syrian coast. From the Iron Age II, local finds include a silver ring with a lapis seal from a tomb at Meqabelein in Jordan, dated to the 7th century (Harding 1950: pl. 6: 9) and isolated beads from various sites. Even in Mesopotamia, located much closer to the sources of this stone, the amount of lapis from the 1st millennium is far less than that found in earlier periods (Moorey 1999: 91) suggesting a sharp drop in trade connections with the source areas at that time. Among the 8th century Samaria ivories, the excavators write that "gold foil and insets of lapis lazuli and other colored substances were used with a lavish hand" (Crowfoot and Crowfoot 1933: 19).[66] However, the extreme scarcity of lapis in other items such as beads from throughout the southern Levant, appears to suggest that whatever supplies were available were probably reaching northern Syria and not the southern Levant.

2.2.1.15. Alabaster

Alabaster is a lustrous white or cream colored calcite (basic calcium carbonate) that is relatively easy to form and carve (registering 2 on the Mohs scale) and is found throughout Egypt along the Nile river (Andrews 1990: 40; Aston, Harrell and Shaw 2000: 21–22). Also refered to as gypsum, strictly speaking, alabaster is not a semi-precious gemstome but its slight translucence and occaisional pinkish bands provided it with an aesthetic appeal and possible cultic significance. However, the term 'alabaster' is commonly used for two different but similar materials: gypsum and calcite (Kleinmann 1976). Gypsum is commonly found in the Negev and the Jordan Valley. Banded calcite, very similar in appearance to Egyptian alabaster with colored bands of white and light brown, also occurs in the same locations. Though locally found albaster (calcite) vessels of the Late Bronze appear to have been imports (Clamer 1976), the finding of both calcite and gypsum, suggest that for small items such as jewelry, local sources would have been sufficient. This stone is sometimes employed for manufacturing beads, pendants and amulets and in Egypt, it was used as early as the Pre-Dynastic period. Termed *shes* by the Egyptians, alabaster was used only sporadically in jewelry (Andrews 1990: 40) and is more often found employed in the production of vases, bowls and lamps (Wilkinson 1994: 86). Alabaster is also found in Mesopotamia where it was in use for bead manufacture since the Early Dynastic period (Moorey 1999: 83–84).

2.2.1.16. Other (Limestone, Chalkstone, Chert, Gabro, Basalt)

Common local stones not consisdered semi-precious gemstones are also sometimes used in the manufacture of beads and pendants. Limestone is an easily worked opaque stone of calcium carbonate that often includes small amounts of minerals that cause it to range in color from cream to yellow, pink and black. Its crystalline form, marble, can assume almost any color. Chalkstone is of similar composition, but is nearly always white and softer, making it very easy to carve, but its use in jewelry manufacture is rare as it is not very durable. Chert, a local form of flint (silicone dioxide) is hard and brittle, making it difficult material to work but its colored variants from the

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64 The Egyptians used the terms *iryt* (manufactured) and *wedeh* (artificial) to denote imitations of lapis lazuli.

65 Winter has also proposed that since lapis is often found along with carnelian, the two are symbolically gendered; lapis to males and carnelian to females (Winter 1999: 51-52).

66 The scarceness of lapis in the southern Levant during the first half of the 1st millennium may call the identification of this material into question, as it is easily imitated in glass. Personal inspection of some of the Samaria ivories now in the collections of the Israel Museum has shown all the blue inlays to be of glass.

quartz family (see above, e.g. carnelian, rock crystal, agate) are common in jewelry manufacture. Volcanic basalt, probably originating in the Golan, Eastern Galilee or Transjordan and gabro, an igneous rock, are also sometimes used in jewelry production, primarily in various simple pendants.

2.2.1.17. Amber

Amber consists of fossilized resin from extinct coniferous trees. While technically an organic material, amber was treated like a semi-precious stone and fulfilled a similar purpose. Its color varies from yellow to brown and it may be polished. Amber was prized for its smoothness, its ease of working and its color. Throughout the Near East and eastern Mediterranean, amber also had a wide range of purported properties and medicinal/prophylactic uses. Pliny the Elder states that it was effective as a prophylactic against tonsillitis and other afflictions of the throat that was worn as a beneficial amulet by babies and was used to cure fever. In powdered form and mixed with honey and rose oil, amber was good for eye and stomach afflictions (Pliny *Natural History* Book 37: 11: 42–52). Over time, amber may also change color (Strong 1966: 14–26) and when burned as incense, amber gives a pleasant smell (Clark 1986: 28). The Greeks ascribed to amber certain magnetic properties[67] and it had a reputation for magical and amuletic power, in addition to medicinal value (Moorey 1999: 79). Amber was also used by the Etruscans as a flux in colloidal soldering of goldwork (Follett 1985).

Amber is relatively soft (2.5 on the Mohs scale), and is easily drilled and carved into beads or pendants (Beck 1970). Amber softens at 150º and melts at between 250º–300º (Webster and Anderson 1983: 578) so it will not be found at sites that were destroyed by intense fire. In archaeological contexts, amber is often difficult to identify, even more so to retrieve, not only because its translucent brown color is similar to decaying glass, but also because decayed amber is brittle and flaky, often crumbling into powder at the touch of a finger. Many brownish stones, glass, faience or other hardened resins may be easily mistaken for amber (Lucas and Harris 1962: 387–388; Serpico 2000: 430) so that references to this material in the literature should be treated with caution. An irregular and perforated chunk of amber is reported from the Iron Age II levels at Samaria (Crowfoot, Crowfoot and Kenyon 1957: 397), but only laboratory analysis of this object can determine if it is really amber and from what specific source. An amber statuette (unpublished) has also been found at the Iron Age II cemetery at Akhziv.

The source of most Near Eastern amber is generally considered to be far to the north, in the European Baltic area, though amber could also possibly have been obtained from an ancient source in Lebanon (Beck 1979: 16) and from geological deposits in Israel (Nissenbaum 1975). The origin of amber may possibly be determined by infrared spectroscopy or by chemical analysis (see Beck in Harding and Hughes-Brock 1974: 171; Beck 1995) though the results from such analyses are still unclear.

Amber is found in small amounts throughout the Near East, from Egypt, Syria, Greece and Mesopotamia and throughout the Bronze and Iron Ages (Strong 1966: 1–2; Harding and Hughes-Brock 1974; Todd 1985; Hughes-Brock 2005). Clear evidence of eastern Mediterranean maritime trade in amber is known from among the finds of the Ulu Burun shipwreck (Pulak 1988: 24–25) while amber beads have been found at Ugarit during the Late Bronze Age (Schaeffer 1938: fig. 50). By the 8th–7th centuries, amber is found in quantity in Asia Minor, as is evidenced by a hoard containing hundreds of amber beads and pendants from the Artemesion at Ephesus (Bammer 1990). In Egypt, amber first saw use in the New Kingdom (Caubet 1998: 106), continuing into the Late Period (Andrews 1990: 63). Some of the amber found in Egypt was tested, revealing a source in the Baltic area (idem) and a few amber beads from Late Bronze Ugarit have been tested with similar results (Caubet 1998: 106, n. 11).[68] In Mesopotamia, amber beads begin to appear at the beginning of the 2nd millennium (Moorey 1999: 79–80) where it was used in beads, pendants and inlays. Locally, amber appears during the Late Bronze Age, as at Tell Abu Hawam (Balensy, Herrera and Artzy 1993: 13). In addition, two amber beads originating from Late Bronze Age(?) levels at Tell el-Ḥesi and Tell Zakariya were examined (Bliss and Macalister 1902: 27). The amber of these beads was determined to be identical to that found in a resinous deposit near Mount Hermon (Beck 1979: 17) suggesting that local sources may have been in use alongside of imported amber from distant regions.

A Neo-Assyrian amber statuette, dated on stylistic grounds to the 9th–8th centuries and now in the Bible Lands Museum in Jerusalem, is considered proof of Neo-Assyrian contacts with the Baltic area (Heltzer 1997: 30–31)[69],

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[67] These are mentioned by Plato in the *Timaeus* (80C). The ancient Greeks observed that if amber is rubbed in hair, it attracts small particles; hence, its Greek name, *elektron*, which gave birth to our own 'electricity' (Ogden 2006: 47). On the origins of the Akkadian *elmešu* and its relation as a loan word to the Hebrew *hašmal*, from which came the Greek *elektron* (Septaugint translation of Old Testament), see Heltzer 1997: 32-34.

[68] In addition, fragments of anorthosite vases, the stone itself possibly originating in the Baltic area, have also been recovered from Late Bronze Ugarit (Caubet 1998: 106).

[69] Heltzer also cites a Canaanite-type bronze idol reportedly found in 1900 in Lithuania as proof of a Near Eastern-Baltic connection during the Late Bronze Age (Heltzer 1997: 30-32).

but only further laboratory analyses can determine how much of the amber found in the Near East was actually of Baltic origin.

2.2.2. Techniques of Working and Fabrication

The understanding of stone working techniques for the production of beads and pendants is based on identification of the tools used in the manufacturing process and their association to raw material in various stages of production in addition to Egyptian pictorial depictions. A few possible workshops for bead manufacture have been identified (see below section 2.7.1.) and caches of tools in association with raw materials for the production of beads are known from as early as the mid-3rd millennium in Mesopotamia. At Ur, the tools of the trade, presumably those of a bead-worker, were uncovered in a burial that included metal and flint drill bits, stone palettes, pounders and rubbers in addition to chips of unworked or semi-worked raw material (Woolley 1934: 206–207). In addition, close examination of the finished products (Reisner 1923: 93–94) and ethnographic studies of modern stone bead makers (e.g. Roux 1995) have been used in order to reconstruct the techniques of stone bead manufacture (Fig. 5: 1).

Stone was worked and fabricated into jewelry using several techniques. The specific techniques and tools used by the ancient lapidary depended primarily on their technological ability and the hardness of the stone. The manufacture of stone beads and pendants can be divided into three primary stages: forming, drilling and finishing (see Figs. 6–7). In forming, the natural stone was roughly sculpted into the desired shape. In drilling, a perforation was made through the desired axis. Because stone beads are most liable to fracture during perforation, the finishing process of final shaping and polishing was usually the last step in manufacture.

2.2.2.1. Forming

In the first stage, the stone is chipped or ground into its desired shape to create a blank (Fig. 5: 1). Ethnographic parallels, especially from India, show that prior to initial forming, many of the harder stones, such as carnelian and agate, are heated and baked to facilitate their chipping and to improve their color (Roux 1995). Chipping was done by tapping the edges of the stone with a wooden or horn hammer against a metal spike set in the ground or another stone (Fig. 5: 2).[70] This method is effective primarily for hard stones of the quartz family (carnelian, agate, rock crystal, etc.) that have predictable fracture characteristics. Grounding involves roughly shaping suitable stones by rolling between two other flat stones (Lucas and Harris 1962: 42). Softer stones, such as steatite, were cut or carved into their rough form using a metal or flint blade or abraded against a rough hard stone (Ogden 1982: 144).

Many of the bead production scenes found in ancient Egyptian tombs depict the use of large blocks of stone for rubbing the stone by abrasion into its desired shape (Fig. 5: 3). Such blocks are made of a hard or gritty stone such as basalt, or a softer and finer-grained material such as terracotta or sandstone (Ogden 1982: 145–146). Such stones usually have a sunken groove or channel into which the bead is abraded.

The introduction of a primitive lathe (Fig. 5: 1), essentially a horizontal bow drill, upon which a cutting wheel may be mounted or upon which a piece itself may be engraved or perforated, was a key innovation in lapidary engraving that was introduced already during the 4th millennium (Gorelick and Gwinnett 1992; cf. Keel 1995: 129–135). However, other studies have upheld a much later date for its introduction, no earlier than the first half of the 2nd millennium (Saks and Meeks 1994). The bead was held by the fingers or attached to a rod while the cutting tool was statically placed or otherwise held. Using this method, the bead maker had far more flexibility in the angle and position of the cutting and greater visibility of the design during cutting.

2.2.2.2. Drilling

Drilling the perforation hole through the bead could have been done in a number of ways. After its initial forming, the bead was secured into place within a recess in a wooden board. Most perforations were probably made using a vertical hand held bow drill, or a vertical hand held drill turned by hand motion, like the kind known from the time of the Egyptian Old Kingdom (Fig. 5: 3; Lucas and Harris 1962: 43). Such hand-turned drills are found in the beginning of the 2nd millennium (Ogden 1982: 147) and are still in use today.[71] The bow drill was introduced during the Egyptian New Kingdom (Fig. 6: 1) but appears to have been in existence already during the Neolithic period, as at Jarmo in northern Iran (Moholy-Nagy 1983: 298), if not earlier (Moorey 1999: 107). The use of several such drills (even up to five!) held at once by one craftsman (Fig. 6: 2–3), indicates the use of mass production methods

[70] Modern Indian bead makers still use this method (Ogden 1982: 144).

[71] Among the stone tools often found in excavations are objects that were probably used as drill stones. These have a conical, cylindrical or square shape with a small, deep, rounded, well-worn and polished depression on one or both sides. Many of the stone objects identified as spindle whorls may have also begun as drill stones that when worn through, were used as whorls.

in bead production by the Egyptian New Kingdom (Stocks 1989; Andrews 1990: 80–81). According to Spaer, during the Iron Age, perforation was most likely carried out with a bow-lathe, a bow-operated horizontally-fixed drill (2012: 507).

The drill bits were often made of metal or flint and were used alongside an abrasive material such as sand. Softer stones were drilled with simple hand-held awls, functioning as drills. The earliest drill bits were of chipped flint, whose use as a drill bit has been identified in the Badarian Period in Egypt, while the use of metal drill bits, some of them tubular, appears somewhat later during Dynasties 0–2 (Gwinnett and Gorelick 1993). Use of flint drills leaves typical tool marks along the walls of the perforation, which is nearly always biconical in form. Use of copper metal drills also leaves characteristic tool marks and in the case of a tubular drill, a thin blank as well (Gwinnett and Gorelick 1993). The latter method invariably results in a plain and straight perforation, though it is often executed from both sides of the bead.

The drilling and boring of a bead is a difficult task and the pressure exerted on the stone can easily cause it to fracture. To avoid this, perforation was usually carried out from both sides resulting in a double-cone perforation, the holes meeting, hopefully, in the middle of the stone. Long beads were perforated in this way while for short beads, a conical perforation executed from one side often sufficed.

A possible percussion technique for perforating carnelian disk beads (Part II, sect. 7.5.2., Type II.9 Stone Beads; Fig. 29: 28–29) from Kumartepe in Turkey, dated to the 6th millennium, is reconstructed as follows: “after the blanks (unperforated disks) were prepared, pecking would have been used to provide a slight indentation in the center…. (this) would then allow the drill to be placed in position…Drilling would then be used to perforate approximately halfway through the blank (leaving a conical depression). The completion of the perforation seems to have been achieved by the removal of a conical flake … a drill-bit is placed in the hole and struck, producing a conical fracture scar (out the other side of the blank) and this completed the perforation” (Grace 1989: 149). The same technique has been identified at Larsa, dated three millennia later (Chevalier et al. 1982) and may probably be identified in numerous local stone disk beads of the Early Bronze Age and later periods made in carnelian and rock crystal. This was probably the technique used to perforate Type II.9 Stone Beads (Fig. 29: 28–29) during the Iron Age II and is testimony to the persistence of stone working techniques from the prehistoric to the historic periods.

The drilling itself was carried out using a flint or metal drill bit with a fine abrasive such as crushed quartz (fine sand). Though flint is a hard material, its major drawback is its brittleness and the difficulty of shaping a sufficiently thin and long drill bit. To overcome this, metal drill bits of copper alloy were employed as early as the end of the 4th millennium. These are usually identified as pins or awls (Ilan and Sebbane 1989) but could have also served as drills. The importance of abrasives in the development of drilling techniques was highlighted by Gorelick and Gwinnet (1987: 37): “In effect, each abrasive particle functioned as a minute micro-drill. The original chipped pointed (flint) micro-drill was the least efficient carrier of (an) abrasive because there was no bearing surface to press the abrasive into the work. What was needed was something that was flat (an un-pointed drill bit) and soft enough to permit the abrasive to become temporarily embedded and firm enough not to wear away too rapidly. (For this)… copper was ideal because it was not breakable (like flint); it could be reused (unlike wood) and it was soft enough so that the loose abrasive became (effectively) embedded (at its end) when it was used as a drill”.

2.2.2.3. Finishing

Final polishing of stone beads was done with the help of abrasive materials such as fine sand or clay mixed with a lubricant such as oil. With the help of an abrasive material, rubbing in a straight groove cut into a stone may form and polish a stone bead. Such stones with a deeply cut elongated groove are common in archaeological excavations and are often identified as bead polishing blocks (see Tufnell 1953: 71, pls. 21: 4, 26: 1 for such blocks from Lachish, dated to the 4th millennium). Such implements could have been used in the initial formation of beads, prior to their perforation. Mass production methods of bead polishing may have included passing a wire through several beads and rolling them over an abrasive material or placing beads on the end of bow drills and rotating them in a recess along with an abrasive material such as sand (Ogden 1982: 150; Andrews 1990: 81).[72]

2.2.3. Discussion

Stones of various colors and properties were commonly used in antiquity for jewelry production, primarily for beads. Stones were also used in pendants and, to a much lesser degree, in earrings and small rings. The types of

[72] Another polishing method (called tumble polishing) used by modern bead makers in India, is to place the beads in a leather bag along with an abrasive material and then to roll the bag back and forth on the ground for ten to fifteen days (Ogden 1982: 150). High-tech tumble polishing is done in a spin dryer machine, an effective but very noisy technique.

stones were chosen according to some kind of underlying symbolism or amuletic significance which, for the Iron Age II of the southern Levant, is largely unknown.

In a study of stone beads and pendants from Late Bronze and Iron Age I sites in the southern Levant, 12% of the beads and pendants were made of stone during the Late Bronze Age, while during the Iron Age I, the amount nearly tripled in size, rising to 34% (Ben Basat 2011: Table 7.33). During the Iron Age II period, the amount of stone beads in relation to other materials decreases slightly to 30%.

Carnelian is one of the earliest and the most common of all the semi-precious stones employed in jewelry manufacture. In a group of tombs dating to the Middle Bronze Age II, Late Bronze Age and Iron Age II at Tell Beit Mirsim, carnelian comprised 52% of the materials used for stone beads and pendants (Golani 2004a), while in the excavation of the Iron Age I strata in Areas H and K at Tel Ashdod, carnelian composed 43% (Golani and Ben-Shlomo 2005).

In a larger sample of stone beads and pendants originating from stratified contexts of the Iron Age I and II levels at Tel Miqne-Ekron, 70% are of carnelian, 13.3% of agate, 3.3% of rock crystal and jasper and the other 13.3% are of various other stones.[73] A quantitative analysis of the stone beads, one of the largest such studies of Iron Age II stone beads to date (over 1500 items), has revealed a clear preference for carnelian in the Iron Age II over other types of stone: in the Iron Age I strata at Tel Miqne-Ekron, only 37.5% of the beads are of carnelian stone while in the Iron Age II strata (primarily Stratum I), carnelian accounts for 81.8% of all the stone beads. An additional study of Iron Age I beads from the southern Levant has found carnelian stone to comprise 85% of all the stone used in bead and pendant manufacture (Ben Basat 2011: XIII; fig. 7.49). Though the statistical values for the amount of carnelian appear to fluctuate between the Iron Age I and Iron Age II periods, what is clear that carnelian is the predominant material used for stone bead and pendant manufacture throughout the Iron Age, and a similar picture will probably be apparent in future studies of earlier and later periods as well.

The preference for carnelian during the Iron Age II at Tel Miqne-Ekron may be due to economic, cultural or even religious reasons, none of which may ever be fully understood (see below section 2.6.2.2.). After carnelian, in decending order of popularity, are agate, rock crystal, amethyst, jasper, hematite, green malachite, turquoise, feld-spar, garnet, serpentine, steatite, diorite, lapis lazuli and alabaster; non-precious stones such as limestone, chalk-stone, chert, gabbro and basalt were used sporadically.

The majority of these stones may be found in the eastern Egyptian desert, and some even closer, in the Sinai and the Negev deserts. A small number of stones, such as lapis lazuli and amber—both found in very limited quantities in the Iron Age II, originate in much more distant sources and are indicative of long-range trade connections, although these materials probably reached the southern Levant through indirect trade. Highly esteemed in Egypt since the Pre-Dynastic period for its ritual and symbolic significance, lapis lazuli is more commonly found in Egypt than in the southern Levant, indicating that eastern trade connections of Egypt largely by-passed the southern Levant, probably by sea from north Syrian ports. Amber may also have been imported, although it also exists locally.

From a technological perspective, working in stone has not received the same amount of attention in the research as metalworking techniques. With the advent of advanced drilling techniques in the Late Bronze Age, such as the use of multiple drills (Stocks 1989), a wider range of forms was produced and more beads could be produced at one time. Little development of stone manufacturing techniques can be detected during the Iron Age II beyond those already known during the previous periods, although microanalysis may one day identify nuances in the basic techniques described here that may have chronological, geographical or cultural significance. Much of our present knowledge concerning lapidary technology is based on ethnographic observation of modern Indian bead workers using primitive techniques, as well as the examination of Egyptian wall paintings showing bead production. The specific manufacturing techniques of stone forming, perforation and finishing/polishing in antiquity have not been thoroughly studied.

2.3. Bone/Ivory/Shell

Bone/ivory and shell are the earliest materials used for manufacture of jewelry (Clark 1986: 5) as they are relatively commonplace and easy to work. Various types of ornaments, primarily beads and pendants, are often made of bone and shells whose ubiquity also made them accessible for even the poorest of people. However, in relation to stone, bone and ivory are generally not common in jewelry manufacture. A study of the Iron Age I jewelry in the southern Levant showed these materials to comprise only 7% of the beads and pendants, while shells made up 12% (Ben

[73] The predominance of carnelian is also prevalent outside the southern Levant. In a hoard of jewelry from Ur dated to the 6th–5th centuries, 1,230 of the beads were of carnelian, 170 of agate and related stones, 66 of lapis lazuli and another 30 of various other stones (Woolley 1962: 105ff., 108: U.500).

Basat 2011: fig. 7.47). Items of bone and shell may suffer from inadequate reporting because they often lack the aesthetic appeal accorded to items of precious metal or worked semi-precious stone. Certain natural forms provided only by bones and shells, such as Type III.4 Shell Pendants (Part II, sect. 7.4.3.; Fig. 26: 2–3), may have borne symbolic meaning and amuletic/cultic significance. Ivory is worked in a similar manner to bone, but because it was a luxury material of limited supply and could be carved into intricate designs, ivory was primarily used for the manufacture of ornamental items other than jewelry such as boxes, plaques or furniture inlays. Bone and ivory are sometimes difficult to differentiate and some publications may lean towards an identification with a more 'prestigious' material such as ivory when bone is actualy at hand, making the true amount of ivory represented in publications suspect.

2.3.1. Materials and Sources

In contrast to all the other materials discussed so far, bone, ivory and shell are all naturally occurring materials that do not have to be mined or refined to obtain.

2.3.1.1. Bone

As it is usually discarded, bone is a common, versatile, inexpensive and readily accessible material for fashioning jewelry objects as well as a wide range of small utilitarian tools (see Wapnish 1991; 1997). Bone may easily be used to fashion simple rings, pendants, amulets and beads. Because they are hollow, long shaft bones of birds are easily adapted as long cylindrical beads (Part II, sect. 7.5.5., Type V.3 Bone Beads; Fig. 34: 5–8) while thick flat scapulae are especially well-suited for cutting out a variety of flat pendants and disk beads. Thicker and more massive bones, such as those from the limbs of cattle, could have been used to fashion rods or pins, such as Type III.1 Bone Pendants (Part II, sect. 7.4.3.; Fig. 24: 1–15). Most bone jewelry items are too small to allow a taxonomic identification[74] and the choice of what bone to use is based primarily on the projected form of the desired object.

2.3.1.2. Ivory

Ivory was one of the first materials held in high esteem, therefore its recurrent use in ancient jewelry and other forms of decorative luxury arts. The reasons for this are its durability, its creamy color, its smoothness and coolness to the touch, its fine grain and the comparitive ease with which it can be carved into intricate shapes and smoothed in addition to the fact that it was not commonly available and often had to be obtained from limited far-off sources. Thus, ivory was usually a royal monopoly obtained through trade, gifts, tribute or booty; its possession conferring status (Clark 1986: 13–20). The ivory used in the southern Levant in the Iron Age II most probably originated from elephants and hippopotami. These are known to have existed in the Levant during the 2nd millennium and earlier (Barnett 1982), but by the Iron Age II, both were virtually extinct in this region. After carving and deposition in the ground for extended periods, it is extremely difficult to distinguish between African and Asian elephant ivory (Herrmann 1986: 55; Krzyszkowska and Morkot 2000: 321). African ivory reached the southern Levant via Egypt, where ivory was in use since Pre-Dynastic times (Acquaviva 2000). Elephants had become extinct in Egypt by Dynastic times, so that elephant ivory was imported to Egypt from further south (Krzyszkowska and Morkot 2000: 320). Another likely source are the Asian elephants of India. Indian ivory is known in Sumer from the early 3rd millennium (Moorey 1999: 116–118). A small source of Asian elephant ivory is known to have existed in the Orontes valley of Syria and the Euphrates region up until the end of the 9th century (Gabolde 2000; Krzyszkowska and Morkot 2000: 322).[75] With the reduction of Egyptian contacts with Nubia during the Third Intermediate period, there was a decrease in the import of elephant ivory into Egypt though shipments of ivory and elephant hides still made their way to the Neo-Assyrian empire via the Phoenicians (Krzyszkowska and Morkot 2000: 325–326).

Most local Iron Age elephant ivory is of African origin (Caubet and Poplin 1995; Krzyszkowska and Morkot 2000: 323ff.). The tusks of the Indian elephant, of which the Syrian elephants appear to be closely related, are much smaller in size and were less preferred even by Mesopotamian craftsmen who were closer to their source

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74 In a 9th century bone workshop recently unearthed at Tell es-Safi/Gath, all the identified bone fragments were of the lower forelimb and hindlimb of domestic cattle (Kolska Horwitz et al. 2006: 169), though none of these items appears to have been fashioned for use as any kind of jewelry object *per se*.

75 During the Late Bronze Age, historical sources relate that Pharaoh Thutmosis III hunted elephants in the Orontes valley of Syria (Andrews 1990: 65; Gabolde 2000).

(Moorey 1999: 116).[76] At least some of the Samaria ivories have been identified as originating from African elephants (Crowfoot and Crowfoot 1938: 55) and the size of some of the Nimrud ivories precludes an Asian source (Barnett 1957: 168). In the 1st millennium, with growing Phoenician contacts with the North African coast and the Egyptian delta, African ivory could have easily been marketed throughout the Near East (Gill 1992).

It is often assumed that most ivory objects originated from elephant ivory. However, a substantial amount of ivory from Bronze Age Syria was actually of hippopotamus tusks (Caubet and Poplin 1987) and maritime trade of African hippopotamus ivory was the source for Syrian, Cypriot, Cretan and Anatolian craftsmen during the Late Bronze Age (Caubet 1998: 105–106). In contrast, examination of Iron Age ivories attributed to workshops in Syria and Phoenicia show a virtual absence of hippo ivory, possibly indicating that hippo populations, found along the Nile but also in the coastal regions of Canaan and in Cyprus, were declining or nearly extinct by the Iron Age II. At present, most ivories of the Iron Age II appear to be of African elephant, to the exclusion of hippopotamus ivory (Caubet 1992: 94–95; Caubet and Poplin 1995: 490).[77] Hippo ivory is whiter and denser than that of elephant and harder to work because of a thicker surface enamel, the curvature of the tooth and its central cavity (Moorey 1999: 115). For these reasons, hippo tusks are preferred for utility objects while elephant ivory is preferred for ornamental work as it is easier to carve (idem: 116).

In addition to ivory, boar tusks and large canines were also used, especialy for pendants (Part II, sect. 7.4.3.; Type III.3 Bone Pendants; Fig. 26: 1). Symbolically, ivories or tusks were considered potent, probably because of the size and strength of the animal from which it came.

2.3.1.3. Shell

Shells are among the most durable natural materials and were exploited for food, vessels, tools, building materials, as a medium of exchange and as offerings. Shells are among the oldest and most accessible means of decoration, being held in high regard despite being of limited practical use (Clark 1986: 23ff., Bar-Yosef Mayer 2005a). Shells may exhibit a broad range of symbolic meanings as ritual objects, signs of wealth or status, protective amulets and are also trade items, which makes them important in establishing the existence of trade contacts with more distant regions (Safer and Gill 1982). Almost any shell can be used for ornamentation, many with little or no modification other than being strung. Some shells also held amuletic protective powers. Their wide appeal, in addition to their possible amuletic role, is illustrated by the fact that shells are often imitated in precious metal, stone and faience (e.g., Part II, sect. 7.4.3.; Type III.4 Shell Pendants; Fig. 26: 2–3). Unfortunately, only recently have shells recovered in archaeological excavations begun to receive due attention; many publications still largely disregard this component of a society's material culture.

Aquatic shells come from either freshwater or marine environments. Ornaments of freshwater shells consist primarily of *Unio* sp. and may have been employed for food as well as being perforated for wearing as a bead or pendant (Bar-Yosef Mayer 1989; 2005a). The use of marine shells includes a wide variety of species, many of whom are not necessarily edible, that originate from either the Red Sea or the Mediterranean. Despite the relative proximity of Mediterranean sources, in the Iron Age II, most of the shells used as jewelry originate from the Red Sea, probably because these species are often larger than their Mediterranean cousins.[78] In addition, Red Sea shells are more varied and colorful. Many of the shells, such as cowries, were modified. At times the shell was collected for utilising only a specific portion of it.[79]

Another type of shell used in jewelry manufacture is ostrich eggshell used to fashion disk beads (see Bednarik 1997). Ostriches inhabited most of the deserts of the Near East until recent times (Phillips 2000). Use of Ostrich eggshell is locally known from the prehistoric periods (Caubet 1982) but is especially common during the Intermediate Bronze Age, when necklaces composed of hundreds if not thousands of ostrich eggshell disk beads are common (e.g., Yogev 1985: pl. 17: 2, incorrectly identified as limestone; Golani and Kohn-Yavor 2005).

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76 Even in the past, the general law of easiest access has not always determined the source of the raw material; African elephant ivory is better suited for delicate carving than Asian tusks so Mesopotamian craftsmen may possibly were prepared to pay more to obtain it.

77 Recent analysis of a large collection of ivory objects from Tel Miqne-Ekron (Ben-Shlomo and Dothan 2006) reports a hippo molar and a handle made of hippo ivory found in the Iron Age II strata at the site. However, as the vast majority of the ivory objects are associated with the Iron Age I strata at the site, it is also possible that these items may have originated from the Iron Age I levels.

78 See for example the nearly exclusive use of Red Sea *Conus* sp. for production of Shell Bead Type VI.2 (Part II, sect. 7.5.6.; Fig. 35: 3-4), probably because the Mediterranean *Conus* species is often too small for the production of such a bead.

79 For example, Phalium or Cassid shells were often collected for their thickened lip which was cut off and used as a crescent-shaped pendant (Part II, sect. 7.4.3., Shell Pendant Type III.6; Fig. 26: 11). Shells of *Pinctada margaritifera* with nacre lining (mother of pearl) were collected for the aesthetic or religious/cultic properties associated with this lustrous coating (and see Winter 1994).

2.3.2. Techniques of Working and Fabrication

Being similar materials, bone and ivory share the same basic manufacturing techniques that include cutting, shaving, engraving, drilling, boring, grinding and polishing (MacGregor 1985; Wapnish 1991; 1997; 2008). The tool kit for working bone and ivory would probably have consisted of awls, chisels, drills, gouges, knives and saws, abrasives and polishers for finishing (see Evely 1993 for a discussion and depictions). A 9th century bone workshop recently uncovered at Tell es-Safi/Gath revealed a large doughnut-shaped stone that probably functioned as an anvil, surrounded by numerous fragments of worked bone, all within a domestic room (Kolska Horwitz et al. 2006). Spatial analysis of a domestic structure that underwent a violent conflagration at Megiddo Stratum K-4 (=Stratum VIA of the Loud excavations) revealed a large amount of bone debris interpreted as the remains of bone working (Gadot and Yassur-Landau 2006: 591). This suggests that production of small bone jewelry objects could have been carried out in a domestic context and did not require a specialized workshop or expertise.

The modification of natural shells and their manufacture into ornaments is also simple (see Francis 1982; Wapnish 1997). The varied forms of shells often needed little or no modification. Shell may be worked with simple stone and metal tools. These would cut and bore and then further shape the shell with stone abraders and rubbers. Shells modified into beads in which the original shape of the shell cannot be recognized first appear at the end of the Natufian period (Bar-Yosef Mayer 2005a: 180).

2.4. Terracotta

Terracotta, or clay, is a very cheap and accessible material. It is easily shaped and may bear a plastic, incised or painted decoration. Terracotta beads and pendants are sometimes found in the Iron Age II, though they are generally uncommon. A similar situation is reported in the Iron Age I (Ben Basat 2011: fig. 7.47). Terracotta was never a popular material for the production of jewelry and it may have possibly been reserved for use by the poorest of the poor. Terracotta beads may also be fired with an alkaline colored glaze, a technique found in the Near East as early as the 16th century (Moorey 1999: 167). This is a cheap method to imitate faience.

Painted beads of plaster and wood are locally known since the Neolithic period, such as at Nahal Hemar (Bar Yosef and Alon 1988). Painted wooden beads may have been more common than the archaeological record would lead us to believe, but the nature of the material makes its preservation over time nearly non-existent, except under special circumstances.

2.5. Siliceous Materials

The production of jewelry items from siliceous materials such as faience, Egyptian Blue and glass has several advantages over metal or stone. First, the materials needed were all readily available and inexpensive. Second, the production process is relatively simple and does not demand a varied tool kit and third, these materials are much more plastic than metal or stone and and therefore enable a wider range of forms and decorative patterns in addition to their ability to take on a broad spectrum of colors. Because of these factors, siliceous materials could also be used to cheaply imitate precious stones and metal and were commonly used as inlays. However, as siliceous materials are not as durable as metal or stone, their use was limited primarily for the production of beads and small pendants.

2.5.1. Materials

Three primary types of siliceous materials were in use for jewelry manufacture during the Iron Age II in the southern Levant. These include faience, Egyptian Blue and glass, which are discussed below.

2.5.1.1. Faience

Faience is an inexpensive artificial material that may be formed into almost any shape and decorated by almost any color, thus effectively becoming an artificial ‘precious stone’ (Nicholson 1993: 9). The first attempts of using a fired glaze were undertaken on steatite beads, the glazure apparently atempting to imitate a semi-precious stone such as malachite (Moorey 1999: 170–171). Over time, with the development of various metal oxide additives, almost any color could have been achieved and thus almost every type of semi-precious stone could be imitated.

Faience is defined as a glazed composition, mainly consisting of crushed quartz (silica or fine sand) mixed with a solution of natron (for alkali content, also interchangeable with salt or plant ashes) and calcium carbonate (lime) that gives a pasty mass (see Lucas and Harris 1962: 156–167; Webb 1978; Ogden 1982: 124–125; Kaczmarczyk and Hedges 1983; Tite 1983; Andrews 1990: 57–58; Peltenburg 1992; Moorey 1999: 166ff.; Nicholson and Peltenburg 2000). This substance can then be hand-shaped or pressed into a mold and after drying, was glazed and fired into a hardened state.

The difference between faience and Egyptian Blue described below is that while the latter is made of frit with an addition of a blue pigment fired at a low temperature, faience is usually made without the initial addition of a pigment and is colored by an alkaline glaze, applied before or after the initial firing. In typical faience, the body, or core, is always granular, generally friable though sometimes hard, and usually very finely divided, though occasionally coarse. The body is usually white, though other colors such as light grey, brown or yellow are also found. Deviations from the white color are due to impurities in the quartz. The glaze is essentially a thin layer of alkaline with colorants that reacted with the underlying silica mass that has melted and fused to form glass on the outer surface of the piece.

The technique of producing basic faience apparently was invented in Mesopotamia in the 5th millennium from where it spread to Western Asia and Egypt (see Kaczmarczyk and Hedges 1983; Peltenburg 1992; Nicholson 1993). The Egyptians termed faience *thenet*, which means dazzling or shining, which is the optical effect of glazed faience. Faience is found in various colors, according to the coloring agent used in the glaze. The coloring agent was probably an oxide of copper, cobalt, manganese, antimony, lead or iron which can produce green, blue, red and yellow and many shades in between. In the glazing process, the dried core is painted or dipped with an alkaline pigment solution, after which the piece is fired at between 800°–950° C. This process is termed applied glazing (Andrews 1990: 57; Lucas and Harris 1962: 172ff.; Tite 1983; Moorey 1999: 184; Nicholson and Peltenburg 2000: 191) and may be recognizable by a thick glaze layer that may exhibit drips, brush marks or flow lines.

Another method of production involves mixing the alkaline glaze material with the silica-calcium carbonate-natron paste before firing (Lucas and Harris 1962: 164–165; Noble 1969). This results in a compact and hard surface, generally matt (Moorey 1999: 184).[80] The piece is entirely homogenous in composition, the core being the same color as the surface.[81] Most examples of this technique are apple-green or pale turquoise to white in color. Though red, black, blue and yellow varieties are found, these are not as common during the Iron Age II as in earlier periods.[82] This method, termed self-glazing or efflorescence, was common in Egypt since Pre-Dynastic times (Nicholson 1993: 8; Nicholson and Peltenburg 2000: 189), though other scholars had previously proposed a much later date in the 22nd or 26th Dynasties (Lucas and Harris 1962: 164–165). As far as is possible to determine, most of the 'faience' beads in the Iron Age II were made using this method as nearly all the faience objects from the Iron Age II, especially the beads, lack a glaze (Spaer 2012: 515).[83] According to McGovern, the Late Bronze Age corpus of faience objects from Tel Beth-Shean was made exclusively by this technique (McGovern 1985: 104), recognizable by the thin coating of the glaze, which usually wears away completely. In addition, many of the faience objects in Egypt from the New Kingdom also appear to have been made by a self-glazing method (Kiefer and Allibert 1971). Self-glazing thus appears to have been in use throughout the southern Levant much before the Iron Age II and there is no reason to suppose that this technique was not known and used by Iron Age II craftsmen as well. However, as faience by definition is a glazed composition, such beads lacking a glaze should technically be termed frit and not faience (Moorey 1999: 167).

Microscopic examination reveals that the substance formed using this technique is very granular in texture and is essentially an imperfect form of glass. This is due to an insufficient amount of alkali in the mixture to combine with all the quartz so that on firing, the fusion of these two elements was only partial. As a result, a considerable number of the quartz grains remain uncombined and are embedded in a matrix of glass. Strictly speaking, because this method does not involve a body material with a separate outer coat of glaze, it cannot be properly termed

80 Some confusion exists in the description of this method. While Lucas and Harris describe this method as producing 'glassy faience' or 'imperfect glass' (1962: 164-165), Noble (1969) has described it as a self-glazing process termed efflorescence, in which the metal oxide pigment is added to the faience paste and during firing, the color migrates to the surface and creates a glaze. As both are descriptions of the same method, it is unclear whether a 'glaze' was actually formed in this way. In either case, the outer surface, though matt, is usually smooth and only the core appears to be granular.

81 Though this technique is very similar to that of producing Egyptian Blue, the main difference appears to be in the firing temperature. While in Egyptian Blue the colored quartz crystals are sintered together in a homogenous mass, in this method of producing faience, the quartz fuses with the natron (alkali) to create a harder mass. However, examination with the naked eye does not usually enable to differentiate between the two methods.

82 A recent study of Iron Age I faience beads (Ben Basat 2011: fig. 7.48) showed the majority to have been of greenish color (52%) with lesser amounts of yellowish (13%), light blue (12%), white (7%), blue (6%), red (5%), black, gray, brown and purple (3-1%). However, without use of objective definitions such as Munsell color charts, definition of color is subjective as it is dependent on visual abilities, preferences and lighting conditions.

83 In practical terms, the surviving body of the object is usually found in a very friable condition and the glaze, if there was one, is usually only evident as small patches on the surface. This is why many objects which for all practical purposes may be seen as 'sintered quartz' are often misnamed as 'frit' or 'paste'.

faience, but could be termed 'glassy faience' or 'frit' (Lucas and Harris 1962: 165).[84] The basic difference between frit and glass lies in the firing temperature. While in true glass the basic ingredients must become completely fused together in a liquidy melt of viscous nature which is then cooled and appears as glass, in faience, the ingredients are fired at a lower temperature and simply *sinter* together or "heated…so that (only) some of them melted or reacted to form a very small proportion of liquid, which upon cooling, served to cement together the unfused grains" (Brill 1970: 115).

As is evident, there is some degree of confusion in the prevailing terminology concerning fired siliceous materials of glazed or unglazed composition. Needless to say, a considerable amount of literature exists, only a small portion of which is given reference to here. Though the definitions are continually being refined by scientific investigation, their exact application will only confuse the matter further, as many of the criterea are not always discernable even to the trained eye. It may thus be better to remain somewhat non-committal, as suggested by Moorey (1999: 168), loosely and broadly differentiating between a glazed composition, meaning faience, and an unglazed composition, meaning frit, even though this may have had a glazed surface that has worn away. Because of the unfeasability of examining each separate object for minute traces of glazure, the populistic and generalized term 'faience' should be retained when refering to both the glazed and unglazed (frit) examples in which the glaze may have worn away.

2.5.1.2. Egyptian Blue

Egyptian Blue is the name given to a specific frit which has a granular or chalky texture and is of a powder-blue or royal blue color (see Lucas and Harris 1962: 340–343; Tite, Bimson and Cowell 1992; Moorey 1999: 186–189). This name is also commonly used to denote a pigment of the same color (Lee and Quirke 2000: 108–111). The former is often refered to as 'blue frit' or 'blue paste', though these latter terms could also refer to a regular frit or faience composition with which Egyptian Blue is often confused. If finely ground silica is heated together with a copper compound such as malachite, along with calcium carbonate and natron, the mixture will form into small crystals termed frit, that due to the copper, are blue in color. Ground down and mixed with water, this blue-colored frit was often used as a pigment[85] or made into a paste that was easily molded into beads, amulets and other small objects. It could then be dried and re-fired at a relatively low temperature, causing the glassy particles to sinter and bind into a hard and solid mass. The result is a product of matt color and uniform texture throughout.[86]

Although Egypt was by no means the main producer of this material, it is commonly termed Egyptian Blue, which the Egyptians termed *shesyt* (Andrews 1999: 63). This material is found in Mesopotamia and Egypt from the second half of the 3rd millennium and it continued to be used for beads and amulets until the Graeco-Roman period (Ogden 1982: 136). During the first half of the 1st millennium, the finding of Egyptian Blue in association with Syro-Phoenician ivories throughout Assyria, has been cited as indicating that the area of Syro-Phoenicia was the stimulus for production of Egyptian Blue objects at this time (Moorey 1999: 187). The material appears to have been a prestige item and as such, may have been imported from Egypt itself. A cake of Egyptian Blue frit and fragments of other such cakes were recovered from Level VII of the Late Bronze Age at Tel Beth-Shean, suggesting that this was imported as raw material to the Egyptian garrrison stationed there (James and McGovern 1993: 151–152). Another cake of Egyptian Blue was recovered from Stratum IX of the large governor's palace at Tel Serʻa, alongside of numerous Egyptian imports (Oren 1993: 1332). A large fragment of a sceptre or a headress for chariot horses(?) made of Egyptian Blue has also been found at Moza, dated to the 7th–6th centuries (De Groot and Greenhut 1997; Greenhut 2009b). The use of such large amounts of Egyptian Blue for the production of luxury items such as this sceptre is unparalleled in Judah during the Iron Age II, suggesting that this item was traded or fabricated by a craftsman who had access to a substantial amount of prestige material.

2.5.1.3. Glass

The basic ingredients for glass are essentially the same as for faience: quartz (sand), calcium carbonate (lime), natron (or plant ashes) as an alkali and a small amount of coloring material (a metal oxide, see Stern and Schlick-

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84 The designation 'faience' for the material described in this section is actually a misnomer. Technically, the term derives from tin-glazed earthenwares produced in an Italian town by the name of Faenza during the Middle Ages (Lucas and Harris 1962: 156). The material described in this section should be termed 'glazed quartz frit', yet the term faience is widely used in the literature.

85 Egyptian Blue is often referred to as a colorant, probably because it has been found as a traded item in ingot bar form (Moorey 1999: 187; Spaer 2001: 26).

86 Archaeologically, it is often difficult to differentiate between Egyptian Blue frit or regular frit and faience. In faience, natural weathering processes often cause the glazed surface layer to erode away leaving the core of the piece exposed. This core often looks exactly like frit. Without a chemical or microscopic analysis, it is thus very difficult to distinguish between faience and frit. Many objects that are identified as faience are either frit or eroded faience.

Nolte 1994: 19–21). Most sand contains a small amount of calcium carbonate so it may be that this ingredient was not a deliberate addition. The first stage of the glass making process was the conversion of the ingredients into a frit at a relatively low temperature (approx. 750° C). The second stage involves grinding up the frit and then melting it in a crucible into a liquidy viscous mass at a higher temperature (approx. 1100° C) and thus producing glass (see Nicholson 1993: 42–43; Moorey 1999: 292ff.). At this stage, carbon dioxide may begin to form within the molten mass. Only retention of the piece in prolonged heat and at a higher temperature allows the bubbles to rise to the surface. As this latter stage was generally not achieved until the classical periods, most glass objects of the Bronze and Iron Ages, especially beads, are identified as glass by the numerous bubbles embedded within their matrix. In its softened, viscous form, glass is very tractable and may be cut, sheared, pressed into molds or poured out a little at a time and roiled into thick round rods which could then be drawn out into thinner ‘canes’ or flattened into strips (see Lucas and Harris 1962: 46–47; Ogden 1982: 128–130; Andrews 1990: 60–63). Depending on the colorant added, glass could be blue, green, brown, red, yellow, black or white (Stern and Schlick-Nolte 1994: 20–21). Its ability to imitate semi-precious stones, which were far harder to model, caused glass, like faience, to be produced as a substitute for stone, especially in the production of beads and inlays (Moorey 1999: 189ff.). Nonetheless, during the Late Bronze Age, glass in Egypt was considered a rare, prestigious and high-status commodity, being listed alongside gold, silver and precious stones in Egyptian reliefs depicting offerings (Shortland 2007: 261–262).

Glass making apparently originated in Mesopotamia or Syria in the first half of the 2nd millennium (Oppenheim 1973; Barag 1985: 35ff.; Lilyquist 1993: 52–57), reaching Egypt by the 15th century (Beck 1934; Nicholson and Henderson 2000; Shortland 2001). During the New Kingdom in Egypt, glass appears to have been a prestige item produced for the elites, while faience was much more common and widespread (Shortland, Nicholson and Jackson 2001). Locally, glass items prior to the Late Bronze Age are rare;[87] many items described in the literature as glass may actually be faience that were unintentionally overfired, thus producing something close to glass. It is only since the 16th century that glass with its attendant specialised techniques was intentionally being produced (Spaer 2001: 23–30).[88] During the Late Bronze Age, glass was well-known in the production of certain luxury items as well as jewelry in Egypt and the southern Levant, where glass production was actively carried out (Barag 1985: 35ff.; Stern and Schlick-Nolte 1994: 25–27; Spaer 2001: 23–26). The Late Bronze Age glass industry of the southern Levant may have also been the stimulus for glass developments in Mesopotamia at this time and may have possibly exported raw glass (Moorey 1999: 194–195).

After about 1150 BCE , glass making of luxury objects is almost unknown in the ancient Near East (Barag 1985: 39, 51; Spaer 2001: 27), but the knowedge of glassmaking was never really lost, being now confined to the production of small and unimpressive beads and pendants (Golani 1996a: 93). The art of glassworking was revived during the 9th century, its rebirth connected with the consolidation and stabization of political forces and the growing Phoenician influence and commerce throughout the Mediterranean.[89] A furnace of the 9th century, with a crucible containing remnants of what may be glass or frit has recently been discovered at Tell Zeraʿa in northern Jordan (D. Vieweger, pers. comm.) suggesting that glass production was being carried out at inland sites as well.[90] Production of luxury glass items other than simple beads and pendants appears to have ceased altogether in Egypt during the Iron Age II and manufacture of glass vessels was carried out primarily in Phoenicia and in Assyria, the latter possibly by Phoenician artisans residing abroad (Barag 1982).

2.5.2. Techniques of Working and Fabrication

The basic techniques of producing molded materials have been discussed earlier. Therefore, the following is a discussion of the techniques used in the shaping and decoration of jewelry made from these materials (see also Reisner 1923: 91–92).

[87] Locally, see for example a singular glass bead from Tel Dan, dated to the 19th–18th centuries (Ilan, Vandiver and Spaer 1993) and another bead from an Middle Bronze Age tomb at Megiddo (Guy 1938: 179, pl. 110: 17d). Possibly the earliest example to date consists of a lump of translucent blue raw glass from Eridu in southern Mesopotamia, dated to the 21st century (Barag 1985: 111, no. 179, pl. 20).

[88] The archives of the Old Babylonian palace at Mari mention *zakûkîtu* in a list of stone vessels. This word has been compared to the Hebrew *zkkt*, meaning glass (and see Oppenheim 1970: 17, n. 33).

[89] In fact, it is the Phoenicians who are attributed as discovering glass. Pliny the Elder tells how of a group of Phoenician seamen put ashore at the river Belus (the modern Naʾaman near Akko). Unable to find sufficient stones to set their cauldron over a fire, they used chunks of natron from the ship’s cargo. In the morning it was noticed that these stones had melted (fusing with the sand on the river shore) producing a shiny vitreous material resembling precious stone (Pliny *Natural History* Book 36: 65: 191).

[90] I would like to thank Dr. Vieweger for this information. At present, it is still unclear what type of siliceous products were being produced but further excavation at this site may provide more information.

2.5.2.1. Faience and Egyptian Blue

The implements needed to produce jewelry of faience and Egyptian Blue are relatively simple. The ingredients were mixed with a little water and then kneaded into a gritty paste in a bowl, basin or on a worktable. With just the right amount of water, the paste is neither too wet to hold its shape, nor too dry to crack and split during forming. The next step is pressing the material into a stone or clay mold for faience beads, such as those found at el-Amarna in Egypt (Petrie 1894). In many cases, the molds include some method of making perforations, either holes or notches to secure a wire in place during the molding operation (Ogden 1982: 125). The impression is then removed from the mold and allowed to dry, then glazed and fired. A terracotta mold for a fluted bead was found at Tel Beth-Shean in a room of a Late Bronze temple (McGovern 1985: 104) while a mold for a *Bes* type figurine, also probably of Late Bronze Age date, is known from Tell el-ʿAjjul (Petrie 1933: 42, pl. 16: 42). Amulets, seals and some beads could have been mold-made while many bead forms could have also been modeled around a tube or wire that was later removed after firing. Faience disk beads (also known as 'mummy beads') as well as other tubular faience bead forms could have been manufactured as a long cylinder formed around a thread or rod and then sliced by rolling over a sharp multi-edged tool into disks or other tubular shapes before firing. The rod or thread was either removed before cutting and firing or, if made of a material that was easily cut through, was left to burn itself away during firing. This mass-manufacturing technique, termed *ad hoc* 'multi-cut' (Spaer 2012: 515–516) is especially efficient in the production of Bead Types III.1, III.5, III.6b and III.7 (see below Part II, sect. 7.5.3.).

No clear remains of a faience industry have but been identified in the Iron Age II of the southern Levant. However, evidence of faience production does exist during the Late Bronze Age. Remains of a workshop used for the production of faience and glass beads that has been identified at Tyre and dated to the Late Bronze Age (Bikai 1978: 7–8) exhibits some of the elements of the production process. At this site, in a courtyard of Strata XVI–XV, the excavations revealed a 'work table' and 'basin' for the grinding and preparation of raw materials along with a small kiln made of an overturned pithos and calcium carbonate chunks along with faience wasters and hundreds of faience and glass beads. The finding of these materials in one locale shows that faience and glass jewelry was probably being produced in the same workshop.

To date, no research has yet been carried out on faience technology of the Iron Age II and only one study has been undertaken on local material from Late Bronze Tel Beth-Shean and Egyptian objects from the Late New Kingdom (McGovern 1992; McGovern, Fleming and Swann 1993). The Egyptian blue scepter head from Tel Moza has undergone compositional analysis (Segal 2009) but the results await comparative analysis. To what extent the Iron Age II siliceous technology reflects that found in the Late Bronze is obscure but probably a moot point. The end products appear the same and there is no reason to suppose that the technology was any different. While faience was originally introduced locally during the Early Bronze Age, during the Late Bronze Age there were many developments concerning coloring and glazing techniques. However, there are no examples of Iron Age II silicate technologies that are not found previously during the Late Bronze as well.

2.5.2.2. Glass

True production of glass probably came about as a development of faience working, an event that likely took place in north Mesopotamia or Syria during the 16^{th}–15^{th} centuries, as the earliest centers of glass production all had active contemporary faience industries (Stern and Schlick-Nolte 1994: 87). As glass must usually be shaped and decorated in a molten or semi-molten state, the techniques used in the manufacture of glass beads, amulets and pendants are different from those used to work Egyptian Blue or faience. High temperatures in excess of 1000° C have to be achieved in order that the ingredients achieve a molten state. A furnace and crucible are needed in which to melt the glass ingots (Stern and Schlick-Nolte 1994: 19–25).

Several forming and decorative methods may be identified in the formation of small glass artifacts during the Iron Age II. Most of these find their beginnings during the Late Bronze Age and continue in use during the Iron Age I and into the Iron Age II as well (see Spaer 2001).

Mold Forming: The molten glass, not entirely liquid but viscous, could have been pressed into a one-piece mold to create flat-backed pendants or amulets, or a two-piece mold if the form was desired in the round. After removal, the piece could have been ground and polished. Numerous examples of stone jewelry molds found primarily during the Late Bronze Age (see above section 2.1.2.1., and n. 43), could have been used in this manner, in addition to their use in casting or shaping of metal jewelry. Though no such molds of the Iron Age II have yet been identified, the large amount of Iron Age II siliceous bead forms suggests that such molds may have once existed. These may have also been made of other materials such as terracotta or wood.

Mechanical Forming: Glass beads could also be cold worked in much the same way that lapidaries work stone beads, by chipping, abrading, drilling and polishing a glass blank. No definite evidence of this technique has yet been identified among the beads of the Iron Age II.

Marvered (free) Forming: Free-formed beads are usually of larger size and are made by taking a small quantity of molten glass on the end of a stick or rod when in a viscous state, then *marvering* or rolling it on a smooth hard smooth surface for final forming. This technique was practiced in the formation of Siliceous Bead Types III.2 and III.4 (Part II, sect. 7.5.3.; Fig. 31: 5–8, 13–17). The removal of the stick provides the bead with the stringing hole.

Rod or Cane Forming: For the majority of the glass beads made in the Iron Age II, two variations of the rod forming technique were used (Spaer 2012: 514). In the first method, beads were shaped by winding a gob of molten glass onto the tip of the rod or cane and then twirling it (Spaer 2001: 44–45). This method produces crude, often lopsided beads, usually of Type III.2 Siliceous Bead form (Part II, sect. 7.5.3.; Fig. 31: 5–8). The second method, also termed 'gob-winding' (Spaer 2001: 45) is the most common, found primarily in Type III.2 Siliceous Beads and involves a gob of glass kept on one rod and made to flow onto another rod that was turned, thus winding a molten thread of glass evenly around the rod (also referred to as the 'bead mandrel').

Rods found in association to glass bead making were found at el-Amarna in Egypt (Petrie 1894: 27). During the manufacturing process, these rods needed to be coated with a substance such as calcite or clay in order to enable their removal from the bead after cooling. Presumably, the craftsman would have simply dipped the end of the rod in a solution prior to the formation of each bead (Spaer 2001: 45, 46). Glass beads made by this method still retain traces of this coating, appearing as a powdery or gritty substance, within their perforations. This technique was identified in the beads from the Late Bronze Age mining temple at Timna (Kertesz 1972: 20).

Folded Rod or Cane Technique: In this method, a wide strip of glass is folded around a cane or stick when the glass is in a viscous state, the two long edges are then fused together and marvered on a hard flat surface. This technique often shows a kind of seam on long cylindrical beads and has also been identified among the Late Bronze Age beads at Timna (Kertesz 1972: 20) but has not yet been positively identified in beads of the Iron Age II (but see also Spaer 2012: 514).

Trail Decoration: A variation of the rod forming technique was often used in the decoration of glass beads (Spaer 2001: 52–53). By this method, after the initial formation of the bead and while it was still attached to the rod, a thin 'trail' was drawn out from a molten glass glob of different color than that of the bead. This trail was then wound around the glass bead in spiral fashion when both the bead and the trail were in a molten state, then the bead was marvered over a smooth flat surface in order to press the newly applied thread into the bead (see Fig.7: 1). This technique is common in the production of Siliceous Bead Types III.2, III.4 and III.6a (Part II, sect. 7.5.3.; Fig. 31: 8, 13, 20, 22).

Scalloped Decoration: After initial winding of the glass trail over the basic bead, when the glass was still in a viscous state, a simple pin could be dragged across the surface of the bead in order to produce a scalloped effect wherein the trails are 'pulled' at set intervals creating a unique, decorative effect (see Fig. 7: 2). This technique is often found on Type III.6a Siliceous Beads (Part II, sect. 7.5.3.; Fig. 31: 20, 22).

'Eye' Decoration: Two methods were employed to produce an 'eye' decoration (Part II, sect. 7.5.3.; Type III.12 Siliceous Beads; Fig. 32: 1–14). In the first method, termed 'stratified eye', layers of small blobs composed of contrasting colors were superimposed one atop the other in diminishing sizes (Spaer 2001: 52). In the second method, termed 'trailed eye', a round glass blob was proscribed by concentric glass trails of contrasting colors.

Tooled Decoration: When the bead was in a viscous state, it could be tooled or shaped by hand-held implements. The most common form of tool decoration is ribbing (Part II, sect. 7.5.3.; Type III.16 Siliceous Bead; Fig. 32: 21–36) that produced a fluted decoration along the stringing axis of the bead (Fig. 7: 4).

Crumb Decoration: A decorative technique in which glass crumbs of various colors are haphazardly applied to the surface of the bead when it was still hot, then impressed into the bead by marvering, producing rounded spots or blotches on the bead (see Fig. 7: 3). Such beads, usually of Type III.2 Siliceous Bead form (Part II, sect. 7.5.3.; Fig. 31: 5–8) are found at Lachish in the late Iron Age II (Tufnell 1953: pl. 66: 75–78), yet the technique was locally known already during the initial stages of the Late Bronze Age (James and McGovern 1993: fig. 64: 3–4). Crushing glass into small particles formed the crumbs.

2.5.3. Discussion

The use of siliceous materials became widespread throughout the ancient Near East during the 2nd millennium, with glass in use primarily during its second half. Attempts in the past at achieving a trace-element profile of faience from different regions have been too sporadic and unsucessfull (Stone 1956). Therefore, only morphological and archaeological evidence is of use at present. Only recently have studies successfully compared specific chemical/mineralogical profiles of siliceous objects from New Kingdom Egypt to those from a few Late Bronze sites in the southern Levant and along the north Syrian coast. According to these analyses, at Late Bronze Age Ugarit, at least some of the glass and Egyptian Blue objects and raw material appear to have been imported directly from

Egypt. On the other hand, typological, stylistic and archaeometric analyses also suggest the existence at Ugarit of a primary workshop for glass, in addition to a secondary workshop for Egyptian Blue and faience, which produced items from imported raw materials (Matoïan and Bouquillon 2003). Faience found at Late Bronze Age Ras Shamra has also been analyzed, indicating that while some objects bear a chemical composition similar to that of faience and Egyptian Blue objects from Egypt itself, in most cases, the composition was significantly different, so that the existence of an active industry outside of Egypt may be inferrred (Caubet and Kaczmarczyk 1992). Local faience production during the Late Bronze Age and Iron Age I at Tel Beth-Shean and the Baqʻah Valley in Jordan has also been established through chemical analyses (McGovern 1992). A few large chunks of Egyptian Blue originating from Egypt were recovered in the Late Bronze levels at Tel Beth-Shean, and Tel Serʻa, suggesting it was imported as raw material to the Egyptians stationed there (James and McGovern 1993: 151–152; Oren 1993). The large sceptre head of Egyptian Blue found at Moza (De Groot and Greenhut 1997; Greenhut and De Groot 2009b) is non-Egyptian in style, suggesting that at least by the late Iron Age II, local (perhaps Phoenician) artisans were familiar with the material. No clear evidence for faience, Egyptian Blue or glass production during the Iron Age II has yet been identified in the southern Levant, though there is nothing to indicate that siliceous jewelry in this period was not locally made.

During the Late Bronze Age, intensified trade introduced new forms and techniques into the southern Levant, resulting in the production of a wide range of jewelry types made of siliceous materials. Judging from the Late Bronze Age finds from the Fosse Temple at Lachish (Tufnell, Inge and Harding 1940), widespread use of faience in jewelry manufacture nearly eclipsed that of stone. Faience and glass were cheaper and easier to produce than stone, much less labor-intensive, and offered a variety of colors, thus providing a cheaper imitation that retained the symbolic significance of the color[91] (section 4.2.1.). Trails and scalloped decoration of glass beads, for example, imitate the variegated bands of colors often found in semi-precious stones such as agate, and nearly every shade known in precious stones could be replicated in siliceous materials.

Quantitative and qualitative analyses of beads from a number of sites, or from several successive strata at one site, may illuminate socio-economic trends as reflected in bead manufacture, although such studies are few. At Tel Miqne-Ekron, a quantitative analysis of the large numbers of beads in Iron Age I and Iron Age II strata indicated a clear trend towards the increased use of faience over other siliceous materials such as glass and Egyptian Blue.[92] This phenomenon is interpreted as the result of increased industrialization and craft standardization at the site (Golani 1996a: 92–93), which is also seen in the increased use of carnelian over other types of colored stone in the transition from the Iron Age I to the Iron Age II (see above section 2.2.3.). A similar process may be identified in other aspects of the material culture at this site, such as ceramics, which become less decorated and more standardized over time. This phenomenon may not be unique to Tel Miqne-Ekron. In comparing the beads of the Third and Fourth Semitic periods (Late Bronze Age–Iron Age I and II) at Gezer, Macalister (1912b: 111) noted that "there is much greater monotony in the shapes and ornamental treatment: the artistic decline so evident in the pottery of this period affects the beads also". Though Macalister did not undertake a quantitative analysis, his review of the thousands of objects from the site certainly provided him with an intuitive understanding of this important phenomenon. Recent quantitative research on beads in the southern Levant has shown a drastic decline in the amount of faience as opposed to glass beads from the Late Bronze to the Iron Age I (Ben Basat 2011: Table 7.33), though it is as yet unclear whether the increase in faience use during the Iron Age II noted earlier is restricted to one site or is a general trend encompassing the entire southern Levant. Future quantitative research on large bead assemblages of these periods may one day provide further insights and supportive evidence.

2.6. Synthesis: The Jeweler's Materials (Sources, Trade and Technological Choice)

2.6.1. Sources

The Iron Age II jeweler in the southern Levant had a wide range of materials to work with. Conclusive data regarding the exact sources of all these materials during the Iron Age II is largely lacking, as only detailed laboratory analyses of a large number and wide variety of artifacts can provide definite answers. Many of the materials are found within the southern Levant itself, such as copper, iron, siliceous materials, terracotta, bone and shell, and a wide variety of semi-precious stones. Other materials, including precious metals such as silver and gold, certain precious stones and ivory, had to be imported or acquired by other means.

91 One of the earliest examples of this phenomenon is the blue-green colored Egyptian faience of the Pre-Dynastic period, which probably sought to replicate turquoise (Platt 2003: 198).

92 At Tel Ashdod, analysis of the beads from Building 5337 of Stratum XII, dated to the 12th century, revealed almost four times as many faience as glass beads (Golani and Ben-Shlomo 2005: 258).

The closest and most feasible source for most of these materials, apart from silver, is to the south, i.e., Egypt. The extremely small amounts of lapis lazuli and amber, which originate in distant lands such as Afghanistan (lapis lazuli) and the Baltic region (amber), probably represent heirlooms or indirect trade. In the 1st millennium, Baltic amber reached the Near East, although a local source in Lebanon and Mt. Hermon has also been demonstrated.

Egypt was always one of the main sources for gold and a wide variety of precious stones, especially during the Late Bronze Age, when Egypt held political and cultural control over Canaan. By the Iron Age II, however, the nature of contacts between Egypt and the southern Levant had completely changed. With the dissipation of Egyptian hegemony, autonomous kingdoms arose throughout the southern Levant, eventually becoming subservient to the rising Assyrian power to the east. While trade contacts with Egypt did not cease, they surely did not remain on the same scale as during the Late Bronze Age.

Lead-isotope analyses of silver from Iron Age II sites have indicated that Greece and the Aegean islands were primary sources, with Spain, Iran, Anatolia and Sardinia as secondary sources. Most semi-precious stones probably originated in Egypt, though other sources such as Mesopotamia, Anatolia and Arabia may have been used as well. Elephant ivory most likely originated in Egypt.

Another probable source for many of the materials used in jewelry production during the latter portion of the Iron Age II is Arabia. After the downfall of the kingdom of Israel towards the end of the Iron Age II (8th–7th centuries), Judah witnessed a period of prosperity as it came under the *pax Assyriaca*. This is evidenced by the increased amount of imported goods in Judah at this time (Katz 2008: 83–139). The source of these imports is often from the south, as Judah controlled a portion of the Arabian caravan routes on their way north to the coastal ports (Holladay 2006). Most of these imported items appear to have been concentrated in such sites as the capital (Jerusalem), indicating that the ruling elites controlled this trade (Katz 2008: 180–183). Many of the materials, such as gold and a variety of semi-precious stones, could have been made into jewelry.

2.6.2. Materials as a Measure of Changing Economic Forces and Trade

2.6.2.1. Background

When viewed in a broad perspective, the materials used to manufacture jewelry are a measure of changing economic forces and patterns. This is evident, for example, in the shift in relative amounts of gold and silver in use during the transition from the Bronze to the Iron Age in the southern Levant. During the Early, Middle, and primarily the Late Bronze Age in Canaan, most precious-metal jewelry was made of gold, as seen in the various hoards, such as those from the Middle and Late Bronze Ages at Tell el-ʿAjjul (Negbi 1970) and Beth-Shemesh (Tadmor and Misch-Brandl 1980). This is also evident in other types of jewelry assemblages, such as those from the Late Bronze tombs at Deir el-Balaḥ (Dothan 1979) and the Late Bronze Fosse Temple at Lachish (Tufnell, Inge and Harding 1940), and in even earlier assemblages such as the EB II tomb near Kinneret (Mazar, Amiran and Haas 1973; Amiran 1993). This phenomenon may actually have begun even earlier, during the Chalcolithic period, as may be evidenced by the gold rings discovered among the Chalcolithic finds in Nahal Qanah Cave (Gopher and Tsuk 1996).

In the Late Bronze Age, the minor use of silver in jewelry manufacture may be a reflection of the situation in Egypt during the Middle and New Kingdoms,[93] when lavish use of gold is legendary (see Wilkinson 1971; Andrews 1990; Müller and Thiem 1999). Silver was probably less common because Egypt does not have any significant silver deposits and most silver was likely imported (see above section 2.1.1.1.).[94]

The history of Egypt and Canaan during the early part of the Egyptian New Kingdom (Late Bronze Age) is inextricably intertwined, Egypt exercising political, economic and cultural hegemony over Canaan, which functioned as a buffer region against the Hittite empire to the north. As the use of gold is predominant in Canaan and Egypt at the same time, it may be reasonably assumed that the source of gold in Canaan during the Late Bronze Age was trade with Egypt. This may also explain the relative scarcity of silver.

Silver deposits in the eastern Mediterranean, for example in Mycenaean Greece, were known and exploited during the Late Helladic period (Stos-Gale and Gale 1982) and Mycenaean ceramic imports are common in Canaan during the Late Bronze Age. However, silver does not appear to have been a significant trade item between the Aegean world and the southern Levant at this time.[95] Perhaps Canaanite jewelers had plenty of the possibly cheaper,

[93] Note a precious-metal hoard from el-Amarna in Egypt consisting of 22 gold ingots and a few silver ingots, silver jewelry and silver scrap, all found in a sealed jar assumed to represent the loot of a thief (Frankfort and Pendlebury 1933: 59-61, pl. 43).

[94] In the same hoard (see above n. 90), a silver figurine of a Hittite god was found. In the report, the composition of the other silver objects is reported as corresponding to silver originating from Anatolia (Frankfort and Pendlebury 1933: 59).

[95] Even in Greece of the Late Helladic period, precious metal in jewelry is more often than not gold rather than silver (e.g., Aravantinos 2005).

Egyptian gold at their disposal and preferred working with this metal rather than acquiring more expensive and imported silver from the west.

The cataclysmic events affecting the eastern Mediterranean at the end of the Late Bronze Age (*circa* 1200) and the beginning of the Iron Age I are also reflected in the use of precious metals and jewelry manufacture. Only a minimal amount of jewelry survived in Egypt from the years 1200–1050 (Ogden 1990/1991: 13) and a similar situation prevails in the Aegean during the so-called Dark Ages. In Canaan, however, precious-metal jewelry was not scarce at all, although now silver was more common than gold. The predominance of silver is clear in the composition of several hoards of the 12th–11th centuries, all characterized by jewelry made entirely or partially of silver, as well as silver scrap, silver ingots and *Hacksilber,* with a relatively small amount of gold.[96] A notable exception is the singular hoard from Tawilan in southern Jordan, consisting of gold jewelry found within a copper alloy vessel (Ogden 1995).[97]

2.6.2.2. Iron Age II

During the transition to the Iron Age II, silver continued to be generally predominant over gold. Numerous hoards of precious metal, many of which consisted primarily of silver ingots, *Hacksilber* (silver pieces broken or cut off from a larger ingot), as well as silver jewelry, are found throughout the Levant during this period (Gitin and Golani 2001; Kletter 2003).[98] In addition, relatively large silver jewelry assemblages from tombs such as Ketef Hinnom

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[96] Following is a list of hoards dating to the 12th–11th centuries predominated by silver items:

1) Two hoards were discovered at Tel Beth-Shean, both dating to the 11th century, one consisting of silver pieces with a total weight of nearly 2 kg, found in the bottom of a pot (Rowe 1940: 26, pls. 29: 12-31, 66a: 3) and the other made up of silver pieces weighing over 2 kg and gold pieces weighing 482 gr found within a jug (Rowe 1940: 26, pls. 29: 32-44, 66a: 1-2; Thompson 2003: 97-98). Both these hoards are foundation deposits associated to the Southern Temple of Raamses III (Room 1026). Vargyas (2007) has reported that some of the gold ingots were fakes as they were essentially ingots of undetermined metal covered by gold foil. A similar situation of counterfeiting was revealed in a silver ingot bar that was found to contain a copper alloy core, also found at Tel Beth-Shean (Thompson 2009: 605-606, photo 11.5). Another hoard from Beth Shean, also probably a foundation deposit found at the bottom of a pot and underneath a wall in Room 1095, contained numerous pieces of hacksilber and siver scrap, along with broken down silver jewelry and a gold armlet, with a total weight of 1.33 kg (Rowe 1940: 19, pls. 34: 17-21; 67a: 1-3). Three additional hoards from the renewed excavations at Tel Beth-Shean include broken silver jewelry, silver ingots and *Hacksilber*, dating to the 12th century (Mazar 1997: 71-72; Thompson 2003: 98; 2009).
2) A small hoard from Tell Abu Hawam consisting of silver pieces and one gold earring was found in a room of Stratum IV, dated to the 12th century (Hamilton 1934: 35, pl. 39: 218).
3) From Tel Ashqelon, two as yet unpublished hoards of *Hacksilber* and some jewelry pieces wrapped in cloth, both dated to the latter half of the 12th century (Balmuth 2001: 15; Thompson 2003: 97).
4) From Tel Keisan, a hoard of bronze and silver fragments and cut pieces of silver jewelry divided into four cloth sachets within a flask, having a total weight of 354 gr; dated to the second half of the 11th century (Nodet 1976: 325, pl. 132; Thompson 2003: 100).
5) From Tel Megiddo, a hoard of three bags of cut silver pieces, as well as whole and partial jewelry found in ceramic vessels and associated with Stratum VIA; dated to the second half of the 11th century (Loud 1948: 157, pl. 229: 7-9; Yadin 1970a: 47, pl. A; Thompson 2003: 100). An additional hoard, also dated to the 11th c., was recently found in a beer jug hidden under a floor in the 2010 excavation season (E. Arie, pers. comm.). This hoard contained nine golden earrings, one of them unique, in addition to a gold signet ring depicting a fish and over 1000 beads of carnelian, gold and silver. In addition, this hoard contained an assortment of silver scrap and two complete silver earrings, all wrapped in textile.
6) From Tel Dor, a hoard consisting of 17 bundles or 'sachets' of silver pieces and cut-up jewelry with a total weight of 8.5 kg, found in a jug buried underneath a floor; dated to the late 11th–early 10th centuries (Stern 2001; Thompson 2003: 98).
7) From Wadi el-Makkuk in the Judean Desert, a hoard of silver jewelry, *Hacksilber* and silver scrap with some gold jewelry (total weight 140 gr), dated to the late Iron Age I (Sass 2002), most probably towards the very end of this period (11th–10th centuries).
8) From Tell Jemmeh, a hoard of silver and a few gold earrings along with gold foil "all…rolled up together", in addition to several glass beads; dated by Petrie to "about 1180" (Petrie 1928: 10, pl. 1: 1-13, pl. 221: 5). However, the presence of a small iron ring and the specific techniques employed in the decoration of the earrings makes a 10th–9th centuries date more probable.

[97] The Tawilan hoard from Jordan (Ogden 1995), composed almost exclusively of gold jewelry and dated to the very early part of the Iron Age II, stands in contrast to the bulk of the evidence.

[98] Following is a list of Iron Age II hoards predominated by silver items:

1) From Arad, a hoard of silver pieces, *Hacksilber* and whole and broken silver jewelry, with a total weight of about 200 gr, all found within a small jug associated with Stratum XI and dated to the 10th century (Aharoni 1980; Thompson 2003: 97; but see Herzog 2002 for a revised dating of Stratum XI to the 9th–8th centuries).
2) From Ein Hofez near Yoqneam, a hoard consisting of silver and electrum jewelry as well as silver and gold scrap, found in several juglets under a floor and dated to the 10th–9th centuries (Y. Alexandre, pers. comm., Thompson 2003: 98).
3) From Eshtemoʿa, the largest Iron Age silver hoard to date consists of broken-down jewelry, *Hacksilber* and cut silver pieces with a total weight of about 25 kg, found within five jugs. This hoard is dated by the excavator to the 10th century (Yeivin 1990; and see Thompson 2003: 99). A more recent study suggests an 8th century date (Kletter and Brand 1998).
4) From Tel Akko, a small hoard of *Hacksilber* and silver ingots dated to the 9th–8th centuries (Dothan 1992: 52), with no jewelry. The hoard was found in a juglet upon a floor or within a fill.
5) From Tel Miqne-Ekron, six hoards consisting of silver ingots, *Hacksilber*, whole and broken-down silver jewelry, with a total weight of 1419.6 gr, all associated with Stratum IB, dated to the end of the 7th century (Golani and Sass 1998; Gitin and Golani 2001; Thompson 2003: 100-102).
6) From En Gedi, a hoard within a cooking pot hidden under a floor and consisting of silver ingots and *Hacksilber*, dated to the 7th–6th centuries (Mazar 1963: 104; Thompson 2003: 98; Kletter and De Groot 2007).

(Barkay 1986), Tel ʿIra (Freud 1999), Meqabelein (Harding 1950) and Akhziv (Dayagi-Mendels 2002; Mazar 2004) are generally lacking in gold.

In Egypt, goldwork had nearly ceased altogether by the time of the 22nd Dynasty (Ogden 1990/1991: 13), while by the Ptolmaic period, Egyptian-style jewelry was no longer produced (Andrews 1990: 199), being generally supplanted by forms common to the classical world. The supply of gold from Egypt apparently diminished after the Late Bronze Age due to the weakening and contraction of the Egyptian empire towards the end of the New Kingdom and the beginning of the Third Intermediate period (Kitchen 2003), which resulted in the loss of direct Egyptian control over Nubia and a reduced amount of booty and tribute coming into Egypt, as well as less Egyptian involvement in its procurement from traditional southern sources. With the decline of stability in Egypt at the end of the New Kingdom, less mining expeditions were undertaken, and less gold was coming into Egyptian coffers. This situation apparently caused a shift from the use of gold to the more widespread use of silver, most of which was probably imported through the Phoenicians. This is clearly evident in the royal tombs at Tanis, where coffins were made of solid silver (Brier 2005), and also in a large hoard found in two jars containing over 50 kgs(!) of silver in the form of ingots and worn-down jewelry that was uncovered at Tell Athrib in the Nile Delta (Engelbach 1924). This hoard dates to the 26th Dynasty, or late Iron Age II, but most certainly included earlier jewelry objects, probably of the Egyptian Third Intermediate period. Another large hoard from Egypt originates from Tell Basta and contained silver vessels, ingots, jewelry and silver scrap, some in the process of being broken down for processing (Ogden 1990/1991). While many of the pieces may well be of earlier date, possibly heirlooms from the 19th Dynasty, the deposition of the hoard is associated with the 26th Dynasty in the Egyptian Third Intermediate period, a conclusion strengthened by the fact that the hoard is composed only of silver.

As less gold was in circulation, the role of silver, which appears to have originated primarily in Sardinia, Anatolia, Greece and perhaps also in Iran and Spain (see above section 2.1.1.1.), grew tremendously. The increasing abundance of silver in relation to gold is also seen further east throughout the Neo-Assyrian empire during the Iron Age II, where many hoards containing precious metals were found composed primarily, if not exclusively of silver (see Gitin and Golani 2001 for a listing and bibliography). Maxwell-Hyslop (1984: 23) assumed "a general shortage of gold" for the Neo-Babylonian and early Persian periods throughout the Fertile Crescent, and the phenomenon appears to have encompassed not only the region of the former Neo-Assyrian empire but also the entire Levant and Egypt as well. The relatively large amounts of precious-metal jewelry from tombs at Tel Michal (Herzog and Levy 1999) and Kamid el-Loz (Hachmann and Penner 1999), both dated to the Persian period, are also predominantly of silver. It is, of course, unwise to deduce a shortage of gold in the Iron Age II from the mere fact that very little gold from that period has been found. That a local shortage of gold was probably not the case is borne out by Neo-Assyrian and Babylonian lists of booty taken from this region during the late Iron Age.[99] However, even these lists indicate a much larger proportion of silver in relation to gold. In contrast, the royal tombs of Nimrud of the 8th–7th centuries contained large amounts of gold jewelry and vessels, most probably produced from melted-down tribute or booty, but very little silver (Damerji 1998; 1999).

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7) From Shechem, a hoard containing *Hacksilber* and silver rings with a total weight of 50 gr. Though this hoard may be dated anywhere from the Iron Age I to the Hellenistic period (Wright 1965: 8; Thompson 2003: 100), the lack of coins, which are common in Hellenistic hoards, makes an Iron Age date more feasible (Golani and Sass 1998: 77. n. 7).

8) From Tel Gezer, a hoard of silver rings and *Hacksilber* found within a jar of unclear date (Macalister 1912b: 262, fig. 408). Two more possible hoards from this site consist of six silver bracelets corroded together originating from a house of the Fourth Semitic period, probably associated with the Iron Age II (Macalister 1912b: 99; Thompson 2003: 99), and a hoard of silver bracelet fragments, a silver toggle pin and several stone vessels (Macalister 1912b: 99-100, fig. 285; Thompson 2003: 99). Though Macalister assigns this latter hoard to the Fourth Semitic period, he notes that it was found in the surface stratum, making a Hellenistic date just as likely. However, the presence of a silver toggle pin of Middle or Late Bronze Age date among the items within the hoard (Macalister 1912b: fig. 285 lower right) makes a much earlier association possible.

9) Lastly, two published hoards containing broken and complete silver jewelry and 5th century coins originate from illegal excavations, one allegedly from Messayef in Jordan and the other from Syria (Kraay and Moorey 1968). Though dated by coins, both hoards contained silver jewelry of earlier date, suggesting that some of the pieces were heirlooms.

[99] The annals of the Neo-Assyrian kings regularly mention gold, along with silver, as part of the tribute payments or booty taken from various kings in the Levant. For example, in his third campaign, Sennacherib received as tribute 30 talents of gold and 800 talents of silver from Judah (Luckenbill 1927: 121 [Taylor Prism, Col. II, l. 37 – Col. III, l. 49]). The annals further relate that his son Esarhaddon carried off much gold treasure from the king of Sidon (Luckenbill 1927: 211 [Prism A, Col. I, ll. 10-35]). His successor Assurbanipal plundered quantities of gold and electrum from Egypt on his second campaign (Luckenbill 1927: 296 [The Rassam Cylinder, Col. II, ll. 28-48]) and gave generous gifts of gold to the local kings of Lebanon (idem: 297; Col. II, ll. 49-125). By one estimate, Neo-Assyrian lists of booty and tribute taken from Judah alone by Sennacherib included approximately 900 kg of gold(!) and 24 tons(!) of silver (Jankowska 1969: 254, n. 5). According to Holladay (2006), the Judahites amassed such a large amount of precious metal from taxation of South Arabian camel caravans. Further references to quantities of gold and silver being given as tribute may be found in the Old Testament (e.g., II Kings 16: 8, 20: 13, 23: 33-35, 24: 13). Thus, a general shortage of gold or silver could have been created simply due to the continuous plunder and heavy tribute imposed upon this region during the second half of the Iron Age by the Neo-Assyrian empire. However, Holladay (2006) has suggested that this situation actually provided a catalyst for the amassment of wealth.

Another reason for the shift towards the use of silver rather than gold, apart from the drying up of the main gold sources in southern Egypt, is the new economic systems imposed by the expansion of the Neo-Assyrian empire during the 8th–7th centuries, which may have increased the demand for silver as currency used for payment of taxes, wages and debts, as well as the purchase of goods and services by weight against an accepted standard (Gitin 1995: 69; Gitin and Golani 2001). With the yoke of Egyptian domination removed, the southern Levant was now open for trade contacts with other regions. At the same time, development of trade networks throughout the Mediterranean and the rise of the Neo-Assyrian empire to the east, brought the seafaring Phoenician traders to the forefront of the historical stage. The Phoenicians, acting as the commercial agents of the growing Neo-Assyrian empire's global and unified trading system (Oded 1974; Frankenstein 1979; Elat 1991; Gitin and Golani 2001; Parpola 2003; Niemeyer 2004: 246), opened up new markets to the east and west, bringing commodities and artistic expertise deep into the Neo-Assyrian homeland and materials such as silver from Sardinia, Greece and Spain to the eastern Mediterranean.

The Phoenician economic expansion apparently began sometime earlier, during the 11th–10th centuries (Niemeyer 2003; 2004). Canaanite commerce with Greece and Cyprus was already well developed during the Late Bronze Age. The commercial revival in the Iron Age II, probably by means of Phoenician seafaring expertise, enabled even farther-reaching trade contacts that reached the far western end of the Mediterranean by the 8th century, if not earlier. Thus, silver became more commonly available throughout the Mediterranean and further east. These political and socio-economic developments may partly explain the predominance of silver over gold in the Iron Age II.

Loss of direct Egyptian control over the gold mines of Nubia, in addition to the changing trade patterns between Egypt and the southern Levant diminished the trade in gold, and with it perhaps the trade in some semi-precious stones that were common in the eastern desert of Egypt. This was not apparently the case with carnelian stone, that appears to have become even more widely in use during the Iron Age I than in the preceding Late Bronze Age (Ben Basat 2011), suggesting that the source for this stone may have also been closer at hand, such as the Sinai or the Negev desert. Glass and faience, however, provided the jeweler with another option: the imitation of various semi-precious stones with cheap and readily available siliceous materials. The techniques of working with these materials had been largely introduced and developed during the Late Bronze Age, although during the Iron Age I siliceous materials were restricted mainly to beads (Golani 1996a: 92). Their resurgence in the Iron Age II, while usually attributed to the relative political stability of the period, may also have been the result of the reduced supply of precious stones.

The creation of a more 'internationalized' or 'global' economy during the Iron Age II saw the need for increased production to meet the demands of expanding trade, and these processes may have also influenced the local production of jewelry. While the growing preference for carnelian stone in the manufacture of stone beads (see above, section 2.2.3.) may have been due to religious/cultic reasons, it was more likely the result of weakened Egyptian power during the Third Intermediate period and the subsequent diminished trade from the eastern Egyptian deserts and southern Egypt, probably one of the main sources of a wide variety of semi-precious stones during the New Kingdom. In addition, the process of growing standardization in jewelry production during the Iron Age II, as opposed to the Iron Age I, may also have brought about a preference for one type of material. In a study of the beads from Late Bronze Levels VII and VIII at Tel Beth-Shean, glass/frit and semi-precious stones were found to be two to six times as frequent as the cheaper and more easily produced faience examples of the same form (James and McGovern 1993: 136). This suggests that during the Late Bronze Age, time and expenditure were invested to produce beads, while in the Iron Age II, large-scale production necessitated less time and expenditure (and a smaller range of materials) for bead production, therefore the increased use of faience.

This is also borne out in the amount of faience and glass beads from the Iron Age I and Iron Age II strata at Tel Miqne-Ekron. Whereas in the Iron Age I, 57% of the siliceous beads were made of faience and 37% of glass, during the Iron Age II (primarily the 7th century), nearly 98% of the siliceous beads were made of faience and only 1% of glass. The reason for this trend may be that as Tel Miqne-Ekron grew in size during the Iron Age II, its economy became more industrialized.[100] With increased industrialization and mass production came increased (and somewhat monotonous) standardization of products.[101] Standardization of jewelry production brought about preference for one kind of stone (carnelian), and in the case of the siliceous beads, a preference for materials that could be mass-produced quickly and cheaply (faience).

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100 The foundations of a large olive-oil processing industrial zone that ringed the city inside its fortification wall is evidence of a drastic economic change that took place at ancient Ekron at the end of the Iron Age II. For more on the reasons for this change, see Gitin 1995.

101 This is also reflected in the pottery of the Iron Age II as compared to that of the Iron Age I at Tel Miqne-Ekron. The Iron Age I pottery repertoire was large and varied, and included numerous types of decoration. During the Iron Age II, and especially towards its end (Stratum IB-C), the pottery forms and decoration became much more limited, as many of the vessels appear to have been mass-produced.

2.6.3. Materials and Technological Choice

The materials and techniques used in jewelry manufacture are an expression of 'technological choice' that was made by the society and/or the craftsman producing the jewelry (Lemonnier 1993). Technological choices are made from a variety of options and are a reflection not only of specific functional needs, but also of social constructs and symbolism. These choices are also a means of non-verbal communication used by a society to convey messages, ascribe powers or offer protection for the individual. In effect, the manner in which such non-verbal messages are expressed in the material culture, jewelry for example, is what may be termed *technological style*, a way of doing something that involves a choice among various (equal) options (Hegmon 1992).

In general, specific materials may have been chosen for the manufacture of certain kinds of jewelry objects. For example, earrings, small rings and large rings were usually made of metal, whether silver, gold or a copper alloy, but rarely in other materials. These metals were chosen for their strength and durability, as the objects made of them were usually solitary creations of large size that were prone to the damages of wear, and because of the relative ease in working metal (versus stone) in the fabrication of larger and often more delicately decorated objects. Pendants and beads were invariably smaller and usually part of a larger creation that permitted a much wider use of colors than singular items such as earrings or rings. Pendants were thus made in a variety of materials combining metals such as silver as well as faience, glass and various types of stone, bone and ivory. Beads were usually made of stone, siliceous materials such as faience, glass or Egyptian Blue, metal, bone, shell and terracotta. During the Iron Age II, a preference may be noted for the use of carnelian over other types of stone, while artificial materials such as faience and to a lesser degree glass, also became widespread. The reasons for the limited variety of materials probably stemmed from increased standardization and mass production (see above section 2.2.1.1., 2.2.3., 2.6.2.2.).

As a show of wealth and social status, larger, more prominent jewelry such as earrings, rings and pendants were often made of metal. In contrast, smaller, less prominent objects such as beads were often made of cheaper materials, although often imitating more expensive materials: blue faience or frit as an imitation of turquoise and colored glass imitating more costly stones that were harder and more time consuming to fashion. The reason for these choices, however, was not necessarily economical; many materials may have been chosen not only for their rarity, but simply for their aesthetic/cultic value.

To what extent the choice of materials was connected to symbolic meaning is difficult to determine (and see below section 4.2.). The significance of a color, texture or other physical aspect probably influenced the technological choice of material. However, in different cultures, the particular meaning may vary. For example, the Egyptians saw gold as representing the sun and the flesh of the gods, while the Greeks saw gold as protecting the body from decay and guaranteeing the afterlife of the soul.[102]

In summary, the choice of material was influenced by technological features as well as economic, aesthetic or symbolic considerations; all of which are expressions of the beliefs, economic realities, needs and social contructs operating within that social group. These technological and stylistical features may have arisen locally and were thus defining markers of a certain group, or may have been adopted or borrowed from other cultures.

2.6.4. Local Workshops for Jewelry Production

2.6.4.1. Identification of a Workshop Space

To date, no excavation of Iron Age II remains in the southern Levant has identified a specific locale that can be interpreted with any certainty as a jewelry workshop, and no pictorial depictions of jewelry-making activities are known from the Iron Age II. This does not mean that workshops for jewelry manufacture did not exist, but more probably reflects our present inability to identify them (Shaw 2004: 17). Therefore, an understanding of the various techniques involved in jewelry manufacture and decoration is essential to the identification of a workshop. Workshops for jewelry production have been identified in other lands, primarily during the Late Bronze Age (Petrie 1894; Symeonoglou 1973: 63–71; Demacopoulou 1974; Bikai 1978: 7–8; Poursat 1978; Younger 1979; Tournavitou 1986; Jackson 2000; Shortland 2000, to list only a few). Most of these were associated with palaces, temples or administrative centers, suggesting that jewelry production was a state-controlled industry, although smaller 'cottage' industries may also have existed, though they are even more difficult to identify.

A jeweler's workshop may be identified by finding a concentration of all or some of the following in a defined architectural unit, or possibly in close proximity to one (see Tournavitou 1986).

[102] In some instances, the meaning is expressed in the name of the material, as in the case of the semi-precious stone amethyst, which in Greek means 'the one that prevents one from getting drunk' (Pliny *Natural History* Book 37: 124; Rudolph and Rudolph 1973: VIII).

1) Specialized facilities for the production of jewelry (e.g., small kilns or furnaces, work slabs, drilling facilities, etc.).
2) Tools (e.g., jewelry molds, chisels, knives, chasing tools, pounding stones, punches, dies, drills, etc.).[103]
3) Raw materials (e.g., precious-metal ingots or pieces of precious metal, various semi-precious stones, ivory, siliceous materials such as pieces of frit and glass, etc.).
4) Half-worked material (e.g., partially formed objects or parts of jewelry, wire, unpolished or partially cut stones, unfired beads, etc.).
5) Discards and waste material (e.g., slag, filings, snippings, damaged objects, stone chips, over-fired beads, wasters, etc.).
6) Finished products.

While pieces of broken-up jewelry, jewelry components in various stages of manufacture and raw materials for the manufacture of jewelry, when found together, have often been regarded as evidence of a jeweler's or smith's workshop (Muhly 2003: 685), such conclusions have been challenged, and as pointed out by Reade, the evidence is nearly always indirect and the conclusions speculative (1986: 83). Bjorkman has attempted to define what would have been the implements required in a jeweler's workshop (1993: 17–18), although these have generally not been found together with hoards of raw, semi-worked or mutilated material, as would have been expected. The problem in identifying workshop space was also addressed by Thompson (2009: 603–604), who noted that many items used by jewelers such as molds and chemical mixtures were not designed to last and often leave no trace in the archaeological record. Nor would the operations needed for jewelry fabrication such as forming and shaping using simple hand tools, leave any overtly discernable traces. Furthermore, the facilities in which jewelers would have worked, which would require good lighting and ventilation, as well as a small recessed fire for soldering, annealing and melting, would have been transient or semi-transient in nature and thus may be easily overlooked by excavators.

Archaeological excavations often uncover one or more elements of a workshop, but it is their association with one another within a proscribed area that enables identification of a workshop space. The finding of complete and semi-worked beads along with production tools and other jewelry objects is generally considered an indicator of on-site production.

The finds at the Early Bronze Age 'Camel Site' in the Negev included flint drills and finished and unfinished stone and shell beads together in a small room, and may represent a bead-maker's room (Rosen 2003: 754–755). Another Early Bronze Age site at which bead production has been identified is Nabi Salah in Sinai (Beit-Arieh 2003: 20–21). One of the inscriptions at Serabit el-Khadem appears to mention a skilled workman who worked in precious stones (Gardiner, Peet and Černý 1952–1955: 17), indicating that lapidaries or bead makers were among the expedition staff at this mining site. The finding of beads of 'local manufacture' at this settlement is taken as evidence of on-site production (Kertesz 1972: 57, 79). At the Late Bronze Age workers' camp at Timna, finished and unfinished beads (idem: 50) were interpreted as evidence of an industry for the production of offerings associated with the sanctuary (idem: 79).

At Late Bronze Age Tyre, there were indications that objects of frit and faience were locally made (Bikai 1978: 7–8; and see above section 2.5.2.1.). This may also be the case at Tel Beth-Shean, where smoothing mortars and unworked semi-precious stones were found, indicative of stone-bead manufacture (McGovern 1985: 104–105). Chemical analyses of frit and faience objects from this latter site were compared to contemporaneous specimens from New Kingdom sites in Egypt. The results show definite regional differences between the two assemblages and strengthen the supposition that siliceous objects were locally produced in the Late Bronze Age (McGovern, Fleming and Swann 1993) and probably later in the Iron Age I and II as well.

One of the best indicators of jewelry production is the finding of stone or terracotta molds for casting or forming of jewelry (see above section 2.1.2.1. and n. 43). These have been found throughout the southern Levant and the Near East (Platt 1972: 276–302) in a wide variety of contexts, none of which is connected to what may be defined as a workshop space. In most cases, these molds are datable to the Late Bronze Age. It is important to note that all examples of these molds were associated with large urban centers. The recovery of several such molds, even if not in archaeological context, would certainly indicate that some jewelry objects were cast or otherwise formed at the site. It is clear, therefore, that jewelry production was limited to a cosmopolitan, urban context, at least during the

[103] A well-documented collection of jeweler's tools from the Hellenistic period is known from Galjub in Egypt (Ippel 1922: 81, IV: Werkzeuge, nos. 107-114).
The finds from a workshop for the production of stone seals excavated at Malia in Crete and dated to the Middle Minoan period (1800–1750), provide insights into the types of tools that might be expected to be found in such a context (Poursat 1978). These include copper alloy saws for cutting stones, blades of obsidian, copper alloy gravers for gouging, remnants of copper alloy drills, bone points and scrapers. In addition, lumps of clay found associated with a water basin were probably intended for taking impressions to check the appearance of the seals (Moorey 1999: 104).

Late Bronze Age, a conclusion upheld by recent research, which often indicates that workshops of prestige items such as jewelry were connected in some way to temples or palaces (Lupack 1999).

In a partially roofed room of Iron Age I Stratum S-4 (12th century) at Tel Beth-Shean, the presence of several stone tools, *Hacksilber*, pieces of carnelian, quartz and faience, as well as ashy remains associated with a tabun, may be evidence of a jewelry maker at the site, as suggested by Thompson (2009: 603–604). In Iron Age I levels at Tel Beth-Shemesh, a concentration of five Type VI.2 Shell Beads (Part II, sect. 7.5.6. and Fig. 35: 3–4) in various stages of manufacture was recently found. Though the specific stratigraphic context and nature of the associated finds is still unclear, this concentration may indicate the existence of a shell-bead workshop.[104]

Evidence of workshops from the Iron Age II in the southern Levant is scanty and often ambiguous. The above-mentioned evidence from previous periods and other lands will assist any future identification of a jeweler's workshop in Iron Age II strata. Recently, a 9th century bone-working workshop was uncovered at Tell es-Safi/Gath (Kolska Horwitz et al. 2006), and the presence of a bone/ivory-carving workshop of the 9th–8th centuries has been suggested in the region of Tell Abu al-Kharaz in Jordan (Fischer and Herrmann 1995). The workshop at Tell es-Safi included waste material and raw material along with half-finished products in association with a large, flat stone interpreted as an anvil. However, it is still unclear what exactly was produced from bone at this locale. In the City of David, a house containing 37 inscribed stone weights along with stone hammers and anvils has been suggested as the workshop of an Iron Age II metalworker, who possibly produced jewelry (Auld and Steiner 1996: 42).[105] In addition, analysis of the Samaria ivories appears to indicate that at least some of them were locally made within the Syro-Phoenician sphere, possibly in Samaria itself, as is evidenced by the presence of incised Syro-Phoenician letters on the backs of some of the pieces (Uehlinger 2005).

2.6.4.2. The Workshop and the Craftsman

No historical texts or depictions dating to the Iron Age II are known that may shed light on the workshop or the craftsman, whatever his specific vocation in the jewelry production process. However, numerous references, often accompanied by pictorial representations, do exist from neighboring Egypt, though these all refer to earlier periods. The relationship between the workshop and the craftsman during the Iron Age II in the southern Levant may thus only be inferred from other lands during earlier periods.

A few scenes of jewelry making have survived from Egyptian tomb murals, most of them associated with the Old and the Middle Kingdoms.[106] These murals describe almost every stage in the jewelry production process, either graphically or in the accompanying hieroglyphs.

The manufacture and decoration of jewelry demanded knowledge and expertise in a wide variety of techniques, and it is unlikely that any one artisan could have mastered them all. Working with precious metals, for example, demands a different expertise and tool kit than bead-making. It is likely, therefore, that different artisans specialized in different aspects of jewelry making. The Egyptians, for example, had separate terms for goldsmith, lapidary and bead-maker. The Egyptian term for goldsmith is *neby*, as *neb* or *nub* is the term for gold itself. Lapidaries were termed *neshdy* or *meneshdy*, 'worker in semi-precious stones', while *iru weshbet* was 'bead-maker' and *seti nub* was 'stringer together of a collar'. Craftsmen who fashioned beads, amulets and other jewelry elements from faience and glass were known as *baba* (Andrews 1990: 81). The activities of all three craftsmen, however, are usually shown side by side as part of the jewelry-making process (idem: 67), which apparently was a state-controlled industry comprising workshops that were probably situated adjacent to temples or palaces. Neo-Assyrian texts also make a distinction between different types of craftsmen, including goldsmiths, stone borers, stone carvers, engravers and coppersmiths (Fales and Postgate 1992: 27). In these texts, even women are described as smiths and stone borers (1992: 34).

Based on the finds from el-Amarna and Qantir in Egypt, Shortland has shown that a clear distinction was made between glass *makers* and glass *workers*, the former only producing the raw material while the latter fashioned it

[104] I wish to thank Prof. S. Bunimovitz and Dr. Z. Lederman, directors of the Tel Beth-Shemesh excavations, for this unpublished information. A review of the artefacts now housed at the Penn Museum and originating from the older excavations carried out at this site by E.Grant on behalf of Haverford College in the 1920's, has revealed an unusually large amount of such shell beads in various stages of manufacture.

[105] Local production of glass during the Iron Age II is suggested by evidence from Tell Zera'a in northern Jordan (D. Vieweger, pers. comm.), though it is as yet unclear if this workshop produced jewelry objects. Considering how common glass and faience jewelry are throughout the Late Bronze–Iron Age II and their wide distribution throughout the southern Levant, the existence of local workshops for siliceous materials is very likely during these periods.

[106] The only depiction of jewelry production from the Iron Age II known from Egyptian tomb paintings is that in the tomb of the Chief Steward of Ibi at Thebes, dating to the reign of Psammetichus I of the 26th Dynasty (650 BCE). However, this depiction is actually a close copy of a much earlier depiction of a jewelry workshop from the Middle Kingdom, showing the production of stone beads and broad collars (Andrews 1990: 79-80). The artist of the 26th Dynasty apparently copied the much earlier depiction, although he often misunderstood the processes illustrated.

into finished products (2007: 262–264). Among the glass workers, a three-level hierarchy existed that was probably headed by the ruling political and religious elite: the top rank being the overseer, who was a nobleman, in the middle was the task master and at the bottom were the ordinary workers or craftsmen, though these probably employed apprentices for the more routine and simple chores (Shortland 2007: 264–267).

In ancient Egypt, the social standing of the lower tier of the jewelry makers was not high, perhaps due to their close contact with metalworking, which was hot, noisy and smelly. The negative social regard of the metalworking trade is reflected in the 12th Dynasty literary text known as the 'Satire on Trades', in which an Egyptian scribe writes: "I have seen the metalworker at his task at the mouth of his furnace. His fingers are like a crocodile's and he stinks more than fish roe" (Andrews 1990: 68).

Jewelers, or artisans involved directly in jewelry production, were usually defined as professional craftsmen. In a papyrus containing a 'town register' from Rameside Egypt of the 12th century, a listing of households by their profession shows that goldworkers and gilders made up 1.2% of the total professional households of the town (Shaw 2004: 17). Likewise, Neo-Assyrian records also specifically mention jewelers, as in the case of a certain man with a Western Semitic name (*Za-ku-ru*) who was the *rab nappāh hurāsi* ('chief goldsmith') in Calah (Oded 1979: 102), along with other jewelry-related craftsmen such as borers (Fales and Postgate 1992: 34). This latter record vividly illustrates not only the export of trained craftsmen from the southern Levant and Syria into the heart of the Neo-Assyrian empire during the Iron Age II, but also suggests that the Neo-Assyrians held these craftsmen in high regard.

One of the peculiarities of Egyptian jewelry making scenes of the Old Kingdom is the depiction of dwarfs as craftsmen (Fig. 1: 1),[107] and dwarfs were always held in high esteem as superior craftsmen in the ancient Near East (Albright 1954). It is unclear why dwarfs were necessarily connected with jewelry making. Perhaps it was to stress the link with the god Ptah, patron of craftsmen, who often appears as a dwarf. Their physical deformities of the legs and back certainly limited their range of work choices and their small deft hands may have been especially suited for the stringing of beads (Sampsell 2001: 65). A more prosaic reason may have been to ensure that they would be easily caught should they choose to steal and run away (Andrews 1990: 68).[108]

Egyptian 'goldsmiths' who held court positions or were buried in tombs were usually the noblemen who supervised the work of the craftsmen, not the artisans themselves. Supervisors or administrators of the workshops probably took credit for the creation of the jewelry and it is in their tombs that jewelry production is depicted. Though the craftsmen are often depicted in wall paintings of high officials and noblemen, no tomb of a jewelry maker has yet been discovered in Egypt[109] and very few craftsmen themselves are ever mentioned by name.

[107] In the Old Kingdom, dwarfs were also depicted as personal attendants in elite households, supervisors of clothing and linen, pet handlers and entertainers/dancers, in addition to jewelry makers (Sampsell 2001: 63).

[108] It is interesting to note that in later European traditions, craftsmen of precious metals were also sometimes attributed with a weakness in their legs. In classical Greek mythology, the divine smith Hephaestos, and in Roman mythology Vulcan, were both lame, and in Teutonic legend, the Nibelungen goldsmiths were dwarfs. Andrews (1990: 68-69) has suggested that the origin of all these lies in ancient Egypt, although dwarfs involved in jewelry manufacture in Egypt are peculiar to the Old Kingdom and are not found in any later depictions of jewelry production.

[109] For an example from Spain of a 4th century jewelry maker's tomb with the tools of the jeweler, see Uroz 1992.

Chapter 3
Cultural Traits

Unlike other elements of material culture in the archaeological record such as ceramics—which are not only much more plentiful, but can also be provenienced physically as to origin of material, and morphologically and artistically as to origin of form and decoration—jewelry is much less common. Furthermore, by the Iron Age II, jewelry manufacturing techniques had become so widespread throughout the eastern Mediterranean that local products are often difficult to identify as such. Nonetheless, jewelry is among the indicators of the impact, adoption and assimilation of cultural traits. As one of the elements of a society's material culture, and because of its apotropaic nature, the jeweler's craft includes traditional symbols, forms, motifs and styles of decoration. These may be developed exclusively by one society, but are often adapted, wholly or partially, through interaction with other cultures. Mechanisms of interaction may include trade, political and economic influence, diplomatic exchange of gifts, conquest, settlement, cultural intermingling, shared beliefs or even the borrowing of an idea.

Due to its geographical position, throughout its history the southern Levant was exposed to the influence of the various superpowers in the ancient Near East, and their impact cannot be ignored. First and foremost, these include Egypt to the southwest. However, Egyptian political and cultural influence was considerably diminished during the Iron Age II as compared with the Late Bronze Age. The rise of the Neo-Assyrian empire to the east brought this culture into direct contact with the southern Levant through conquest and subsequent political and economic control, while local craftsmen made their way eastward to the urban centers of the empire. At the same time, the rising kingdoms of the Arameans/Luwians to the north and the Greek city-states and Cyprus to the west also began to make their presence felt.

Within the southern Levant itself during the Iron Age II, the social milieu included Phoenicians in the north, Philistines along the southern coastal plain, and Israelites and Judahites in the center of the country (to name only some), providing an internal network of cross-inspiration.

3.1. The Transmission of Cultural Traits

The Late Bronze Age witnessed the foundation of a complex network of international contacts between the major powers of the Near East and this heightened interaction facilitated a tremendous mobility of goods and craftsmen throughout the Near East (Moorey 2001: 1; Feldman 2006). When manufactured goods traveled across borders as gifts, booty or traded items, only the ideas inherent in their manufacture could be copied. However, when the artisans themselves crossed borders they could accurately reproduce and teach other craftsmen the specific techniques and concepts behind their finished products (see Hoffman 1997; Markoe 2003: 210–215).

The transfer of technology, especially that concerning luxury crafts such as jewelry which are small, easily transportable and may be used to express status and prestige, was most probably instigated by the royal courts themselves. This could have been implemented by peaceful diplomacy, such as royal gift exchange, or warfare that brought in booty as well as exiled craftsmen. This transmission of technology resulted in the creation of a kind of 'international artistic style' throughout the Near East already during the Late Bronze Age (Feldman 2006), that integrated existing jewelry manufacturing and decorative techniques together with many of the basic forms that had undergone adaptations by local craftsmen. In the minor arts such as jewelry, this 'internationalization' often blurred any distinctions between the origins of forms or techniques, thus impeding decipherment of the cultural influences at work. According to Maxwell-Hyslop (1971: 202) "the standardization of technical methods from the ninth and eighth centuries B.C. onwards makes [the problem of origin] difficult to solve". Caubet (1998: 105) has noted that while the Aegean world and Egypt had well-defined artistic characteristics in the minor arts (such as jewelry), which may be identified even by the layman, the art of the southern Levant is not as readily identified as that of its well-known neighbors.

After the collapse of the Late Bronze Age trade system during the upheavals that shook the eastern Mediterranean during the Iron Age I, a new and more developed trade network was established at the beginning of the Iron Age II. The southern Levant now became the point of origin of this expansion of trade at the start of the 1st millennium (Sherratt and Sherratt 1993) as Phoenician trade and colonization induced an enormous increase in peaceful mercantile interaction throughout the Mediterranean basin (Niemeyer 2003; 2004). Manufactured goods and skilled craftsmen crossed borders, knowledge was shared[110] and numerous artistic elements of the southern Levant were thus spread throughout the Mediterranean and the Near East (Markoe 2003).

Military conquests also contributed to the mobility of craftsmen across borders, and with them their accumulated knowledge and skills that could be exploited by royal courts. In the Iron Age II, this is clearly evident in the various imperial records of the Neo-Assyrians, which often mention various types of craftsmen, including women, who were taken captive and brought to the empire's royal courts (Oded 1979; Fales and Postgate 1992: 24, 27, 34).[111] The Neo-Assyrian annals of deportees specifically mention jewelers (Oded 1979: 102).

Another means by which cultural influences or technology may have been transferred across borders was by independent traveling craftsmen. Near Eastern craftsmen, like other specialists, were often mobile and traveled as itinerant workers (Zaccagnini 1983; see also Burkert 1992). Though the presence of 'traveling tinkers' in the southern Levant during the Iron Age is not substantiated by any written sources (Moorey 2001: 11), it is possible that in times of political stability, small bands of craftsmen may have migrated throughout the region, selling their products and absorbing and transmitting cultural influences throughout their journeys. Evidence for itinerant jewelers is known from Early Bronze Age Mesopotamia (Canby 1965), and the well-known Beni Hassan depiction of the traveling Asiatic smith with his tools upon the back of a pack animal appears to represent Syrian/Canaanite itinerant craftsmen during the Egyptian Middle Kingdom. However, some scholars maintain that highly skilled craftsmen would have been too valuable for the royal elite to allow them to wander of their own free will, and were therefore always kept close to the royal court or hired out or exchanged between rulers (Muhly 2005).[112]

As most jewelry items are often relatively simple, similar forms are found over a wide area and time span and do not always enable definition of cultural influences. In addition, many types may have been 're-invented' at various times and places, therefore it is only the more specialized, unique or distinctive pieces that reveal the influences of a specific culture or geographic region.

3.2. Foreign Contacts

The southern Levant during the Iron Age II was surrounded by such cultural/political entities as Egypt, Assyria, Aram/Luwia and Greece. These lands are here regarded as external, or foreign influences on the southern Levant.

3.2.1. Egyptian

The upheavals of the 12th century in the eastern Mediterranean brought a gradual end to Egyptian political and cultural domination of the southern Levant. However, by this time Egyptian influence had become so well entrenched in the local iconography that many cultural elements continued in use. As in the preceding centuries, during the time of the Egyptian 21st Dynasty and throughout most of the Third Intermediate Period, Egypt was largely resistant to foreign iconographic influences, though some measure of cultural relations did exist between Egypt and the Kingdom of Israel (Niwiński 2000: 25–26). Diplomatic ties and agreements were often accompanied by the exchange of gifts between royal courts, often prestige items such as jewelry, especially in diplomatic marriages, and thus were a mechanism for the transmission of technology (Moorey 2001; Feldman 2006). This custom of gift exchange is well-attested in the historical records and such exchanges are possibly alluded to in the marriage of Pharaoh's daughter to King Solomon (I Kings 9: 16) and the visit of the Queen of Sheba to Solomon's court (I Kings 10: 2).

Nearing the end of the Iron Age II, the rapid growth of international trade under the auspices of the Neo-Assyrian empire probably included contacts with both Egypt and the southern Levant. Egyptian hegemony in this region was partly reinstated only after the decline of Neo-Assyrian influence at the end of the 7th century (Naʾaman 1991: 39–40; 2002; Kitchen 2003).

Numerous Egyptian or Egyptianizing elements are apparent in the jewelry of the Iron Age II, nearly all of which also existed during the Late Bronze Age and Iron Age I, although no special effort was made to produce the jewel-

110 An allusion to this is found in the biblical narrative (2 Chron. 2:12-16). Hiram of Tyre loans Solomon one of his craftsmen (also named Hiram) saying: "[he is] a skillful man…a master craftsman…skillful to work in gold and in silver in brass in iron in stone and in timber, in purple in blue and in fine linen and in crimson; also to grave any manner of graving and to devise any device…with thy skillful men and with [those] of my lord David your father". This passage epitomizes two important factors regarding technological transfer between cultural/political entities: the exchange of skilled craftsmen between rulers as a matter of diplomacy, and their versatility in various crafts (Moorey 2001: 4).

111 This is also exemplified in the Old Testament, when, after the sack of Jerusalem, Nebuchadnezzar is said to have deported artisans to serve in the Babylonian royal court (2 Kings 25).

112 Artisans were often considered so valuable that the Hittites, for example, had extradition treaties for fugitive craftsmen and Assyrian records often deal with the movement of professionals (Sasson 1968: 51).

ry in a typically Egyptian fashion. Local manufacture and use of Egyptian-style pendants is well-known in the Late Bronze and Iron Ages (see McGovern 1985). The character of the Egyptian-style jewelry appears to be a local adaptation that may be viewed as a form of emulation by the elite elements of the local population to advance their own stature (Higgenbotham 2000). These items mainly include the numerous forms of Egyptian-style amulets depicting gods, animals, plants or sacred symbols that were adopted by Canaanite society, but were interpreted in a slightly different manner than in Egypt (McGovern 1985: 102). On the other hand, many items of Egyptian inspiration common in the Late Bronze Age gradually faded out during the Iron Age I and disappeared altogether by the Iron Age II. These include various types of earrings (Type V Earrings of the Late Bronze and Iron Age I) and earplugs (Type VI Earrings; Fig. 14: 1–5),[113] as well as some finger-rings, primarily those with cartouches or otherwise decorated with hieroglyphs (e.g., Small Rings-Finger-Rings Types III.1, III.3a–d, III.8b of the Late Bronze and Iron Age I). Type II.4 Lotus-Seed Vessel Stone Pendants (Fig. 26: 2–3), which were quite popular during the Late Bronze Age and Iron Age I, enjoyed a continued, yet more limited presence during the Iron Age II. Small Ring Type III.6a Finger-Rings with Swivel Bezel Mount and Scarab (Fig. 15: 23–29), also of Egyptian inspiration, were found during the Iron Age II though they were probably not of Egyptian manufacture. Egyptian jewelry *per se*, with its lavish use of gold, intricate and detailed creations in beads of faience and semi-precious stone and attendant expressions of fine *cloisonée* and openwork (see Aldred 1971; Wilkinson 1971; Andrews 1990), was nearly non-existent in the Iron Age II of the southern Levant. No new forms or concepts of Egyptian inspiration that had not already existed during the Late Bronze Age and Iron Age I were introduced during the Iron Age II. This suggests that there was little or no direct Egyptian cultural influence on the Iron Age II jewelry of the southern Levant. Any ‘Egyptianizing’ or ‘Egyptian-inspired’ items associated with the Iron Age II in the southern Levant were assimilated and in use already during the Late Bronze Age and Iron Age I, or were introduced by non-Egyptians. Egyptianizing influences are a common element in Phoenician art and it was the Phoenicians who were responsible for their diffusion throughout the Mediterranean during the Iron Age II (see below section 3.3.1.).

During the Iron Age II, Egyptian-style jewelry and motifs, such as Hollow Metal Lotus Pendants associated with Type III.1 and Type IV Earrings, for example (Part II, sect. 7.1.; Figs. 13: 1, 14: 7–9), are often clearly not of Egyptian manufacture.[114] Similarly, the local Canaanite populace of the southern Levant adopted ‘Horus eye’, or *udjat* amulets in the Late Bronze Age and Iron Age I (McGovern 1985: 102; Cahill 1996), although the protective powers attributed to them may have been interpreted in a local manner.

The lack of direct Egyptian cultural influence is also borne out by the rest of the material evidence, as there are few objects of the Egyptian Third Intermediate Period that found their way into the southern Levant. However, limited cultural contacts are evident, as the local presence of Egyptian hieratic writing in the 1st millennium (Goldwasser 1991) and the presence of local objects of late Iron Age II date in Egypt (Maeir 2002), indicate some trade contacts.

In light of the above, Herrmann’s contention that the Egyptian-style faience amulets were all Egyptian exports to the southern Levant appears unfounded. He contends that the production of Egyptian-style faience amulets was an Egyptian industry, as numerous elements of a faience industry, including raw materials, molds and firing kilns, have been found in Egypt, as at el-Amarna (Petrie 1894), while no clear indications of a faience industry have yet been identified in the southern Levant (Herrmann 2009: 714). However, the Amarna evidence relates only to the Late Bronze Age, and a small number of molds from the same period have been found locally. In addition, a limited faience industry is found during the Late Bronze Age in the southern Levant (McGovern 1985: 103–105), and there is evidence that faience was manufactured in other regions at this time, such as the Aegean (Foster 1979). Limited remains of what appears to have been a workshop for the production of faience and glass beads were uncovered in Tyre, also dated to the Late Bronze Age, and a possible 9th century glass workshop at Tell Zera‘a in northern Jordan (see section 2.6.4.1.). In fact, the Amarna letters themselves refer to Tyrian export of raw glass to Egypt during the Late Bronze Age (Barag 1985: 38), while glass ingots in the form of ‘cakes’ were in circulation through maritime trade throughout the eastern Mediterranean, as is evident in the finds from the Ulu Burun shipwreck off the coast of Turkey (Pulak 1988). Furthermore, Iron Age II production centers of faience and glass during the Iron Age II are known from Cypriot Kition and further west at Carthage and Tharros (Markoe 2003: 209). This leaves little doubt that such an industry probably existed in the southern Levant during the Iron Age II as well, when there was much less direct Egyptian involvement.

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113 Earplugs are very rare, being found locally primarily during the Iron Age I, when Egyptian fashions were still in vogue in the southern Levant. The very limited presence of this type into the early Iron Age II indicates that Egyptian ornamental styles, even though they had already gone out of fashion in Egypt, may have been retained locally, possibly through or because of Phoenician influence.

114 However, at least one object, a Type III.4 silver finger-ring with attached cartouche-shaped bezel that originates from a hoard of silver jewelry from Tel Miqne-Ekron and is dated to the late 7th century (Fig. 15: 17; Golani and Sass 1998: 68-70, fig. 13: 4), is considered by B. Brandl to have been of specific Egyptian manufacture (Brandl, pers. comm.). This type of ring and the use of engraved Egyptian hieroglyphs are widely known throughout the Mediterranean as a Phoenician ring type.

3.2.2. Neo-Assyrian

The period of Neo-Assyrian domination during the 8th–7th centuries saw direct involvement of their administration in local affairs. During the latter half of the Iron Age II, Phoenician traders were directly supervised by the Neo-Assyrian authorities, rendering them the primary, if not the sole commercial agents representing Neo-Assyrian interests in the eastern Mediterranean (Oded 1974; Frankenstein 1979; Elat 1991; Parpola 2003; Niemeyer 2004: 246; Fantalkin 2006: 200–202). This state of affairs greatly magnified the impact of Phoenician culture throughout the Levant and the Mediterranean.

Prior to the Iron Age II, there was only minimal cultural contact with the Assyrians to the east. However, certain jewelry manufacturing technologies, such as granulation and glass production, first appearing in the east, became widely used throughout the Near East and the eastern Mediterranean, reaching the southern Levant by the end of the Middle Bronze Age (section 2.5.1.3.). With the repeated Neo-Assyrian conquests in the southern Levant during the 9th–8th centuries and the massive deportations of populations throughout the Neo-Assyrian empire (Oded 1979), eastern influences were imported, but more significantly, local influences were exported eastwards with the deported artisans and craftsmen, such as jewelers, and were quickly adopted by the Neo-Assyrians. In a roundabout fashion, certain Neo-Assyrian styles that began to appear locally in the latter portion of the Iron Age II were actually Neo-Assyrian derivates of local forms. Two examples of this phenomenon are briefly noted:

Type I.3a and I.3b Solid Lunate Earrings (Fig. 8: 15–23) were found locally in the Late Bronze Age and continued into the Iron Age II, when they also appeared in Assyria, often with added granular decoration. While Maxwell-Hyslop (1971: 237–240) viewed the local examples as an eastern influence, the general lack of granular decoration in Assyria prior to this period suggests the work of Syro-Phoenician jewelers,[115] deported eastwards as a result of Neo-Assyrian conquests (Kraay and Moorey 1968: 195). The technological ability of these relocated craftsmen thus may account for the appearance of jewelry with granulated decoration throughout the areas affected by the Neo-Assyrian empire, including the southern Levant.

Solid Lunate Earrings of Type II.1b and Type II.2 (Figs. 10: 18–22, 11: 1–14) also appear as local Late Bronze Age innovations. Variants of this type are common on 8th century Neo-Assyrian reliefs as tri-lobed earrings (see Fig. 9: 23), which are also seen in local depictions, as on a statue from ‘Irjan in Jordan (Fig. 9: 24), or as elaborate drop-shaped forms (see Part II, sect. 7.1.2.). Their appearance locally is also attributed by Maxwell-Hyslop (1971: 226) to the Neo-Assyrians, though their Neo-Assyrian origin has been contested (Platt 1972: 145) and a Phoenician origin suggested instead (Gubel 2005: 131). The appearance of Earring Types II.1b and II.2 during the Late Bronze Age is thus indicative of a local product that was apparently adopted by the Neo-Assyrians during the Iron Age II, and then reappeared locally as a Neo-Assyrian elaboration of the earlier form. In addition, Iron Age II examples of Type II.1b Earrings (Fig. 9: 20–21), such as that from the Jordanian hoard (Fig. 9: 20; Kraay and Moorey 1968: pl. 22: 130), exhibit local decorative techniques such as wound-wire on the hoops, yet at the bottom of the attachment is an eight-pointed star, symbol of the Neo-Assyrian goddess Ishtar (Kraay and Moorey 1968: 198).

Neo-Assyrian cultic and iconographic influences are also evident in several isolated objects such as the Type I.13 Metal Pendant depicting the Assyrian god *Pazuzu,* found at Tel Beth-Shean (Ornan 2006a; Part II, sect. 7.4.1.; Fig. 22: 33) and the Type I.2a Metal Pendant from Tel Miqne-Ekron (Fig. 22: 7), which depicts a Neo-Assyrian cultic scene, probably executed by a local artisan (Ornan 2001b). Though this scene is typically Neo-Assyrian, its presence at North Syrian sites such as Zinjirli and Urartu (von Luschan 1943: 99ff, pl. 44: d–f; Kellner 1991: 167, pl. 4) suggests that Syria was the conduit for the transfer of iconographic imagery to the southern Levant. The latter object, along with several locally made seals, offers evidence for the adaptation Neo-Assyrian imagery by local artisans and implies the worship of the Neo-Assyrian goddess Ishtar in the local cult (Ornan 2001b).

Maxwell-Hyslop (1971: 227–228) and Moorey (1980: 82–83) have suggested an eastern ancestry for Type II.6b Solid Lunate with Fixed Attachment Earrings with Attachment of Hollow Granule Cluster (Fig. 11: 11–16) that appeared late in the Iron Age II and continued into the Persian period. However, this is unwarranted if Type II.6b is seen as a conceptual development of Type II.6a Solid Lunate with Fixed Attachment Earrings with Attachment of Solid Granule Cluster (Fig. 11: 1–9), which appeared locally from the Late Bronze Age onwards (Part II, sect. 7.1.2.). The technical knowledge and skill required to fashion Type II.6b earrings existed locally during the 7th century (and see especially Type II.1a Earrings; Fig. 9: 1–17) and these examples may simply reflect a local development that occurred simultaneously in the east.

The final item demonstrating connections far to the east of the southern Levant are the Type II.2b Stone Pendants of Inverted Triangular form (Part II, sect. 7.4.2.; Fig. 23: 8–9). Though local examples from stratigraphic contexts congregate around the Iron Age II to Persian periods, this distinctive type is found much earlier in

[115] For example, the use of the granulation technique appears to have been firmly entrenched at Alalakh and Ugarit by the 15th century (Woolley 1955: 272; Maxwell-Hyslop 1971: 134-138, pl. 100).

Mesopotamia, Iran and southeastern Europe, suggesting that all local examples were imports that may have been in circulation as trade items throughout an extensive region for a very long time.

The Neo-Assyrian influences evident during the Iron Age II later gave way to those of the Achaemenid Empire during the Persian period, when eastern cultural influences in the local jewelry become more pronounced (Rehm 1992).

3.2.3. North Syrian (Aramean/Luwian)

Cultural contact with the Arameans and Luwians to the north was of a limited nature during the Iron Age II (see Hawkins 1982). Arameans are known to have made frequent military excursions southwards (Naʾaman 1995), and definite, though limited, evidence of Aramean or Mesopotamian cultic/religious contact has been revealed, for example, on a basalt stele from Bethsaida (Bernett and Keel 1998; Arav, Freund and Shroder 2000: 50–51). During the second half of the 9th century, the Aramean kingdom of Damascus appears to have exercised some measure of political influence over northern Israel. This is evident from the Aramaic inscription on a stele from Tel Dan (Biran and Naveh 1995; Ornan 2006b: 300–301) and from a bronze plaque bearing a cultic scene from the same site, both dated to the 9th century (Ornan 2006b). During the latter portion of the Iron Age II, Neo-Assyrian military and political domination terminated whatever Syrian hegemony had existed in northern Israel, though Syrian elements were probably incorporated into the administration of the Neo-Assyrian Empire (Ornan 2006b: 301). Only a very few Syrian traditions are detected in small objects of local origin, such as a bulla from the City of David depicting the symbol of the God Sin dated to the 8th–7th centuries (Brandl 2000: 63–65). Even during the Late Bronze Age, when the Hittite empire played a more prominent role in geo-political events affecting the southern Levant, only a very few jewelry items and foreign cultural manifestations made their way south. Among these, small rings of Type III.2a Flattened, Open-Ended Annular Finger-Rings should be mentioned, as these often have Hittite epigraphic signs engraved on the widened front (Part II, sect. 7.2.3.). Such rings are found throughout Syria, especially in the Middle Euphrates region and in Anatolia as well (Singer 1993). They are found locally during the Late Bronze Age and the Iron Age I, while one example from Tell el-Farʿah (S) is of early Iron Age II date and may possibly have been an heirloom (Part II, sect. 7.2.3.).

Items such as the Type I.10 Double Concentric Spiral Wire Metal Pendants (Fig. 22: 29) may have had an Anatolian origin, although they have a long history stretching from the 3rd millennium to modern times (Part II, sect. 7.4.1.), and were so widespread that they could have been ‘reinvented’ at various times and places.

3.2.4. Greek

Objects showing specific connections with Greece or Crete are also extremely rare among the Iron Age II jewelry repertoire of the southern Levant. The local presence of Euboean pottery as early as the 10th–9th centuries (Waldbaum 1997; Boardman 2006: 513–515) indicates limited western contacts during the initial Iron Age II, though the Phoenicians appear to have effectively blocked most Greek trade to the southern Levant during much of this period (Fantalkin 2006: 200–202). A more substantial Greek presence in the eastern Mediterranean is known primarily from the second half of the 8th century at such sites as Naukratis in the Nile Delta, Al-Mina on the Syrian coast and Mezad Hashavyahu on the Israeli coast (see Waldbaum 1997; Boardman 2006). Locally, East Greek pottery made a sudden but fleeting appearance in the coastal plain area at the end of the 7th century (Fantalkin 2006: 202).

As for jewelry, a solitary example of a Type II.8b Solid Lunate Earring found in the Tawilan hoard and dated to the 9th century, finds a good parallel at Lefkandi in Greece from the same period and limited parallels may be found in the Iron Age I as well, such as in Type II.9 ‘Tassel’ Earrings that continue to the very beginning of the Iron Age II (Part II, sect. 7.1.2.; Fig. 11: 25–26). These suggest some contact between these two cultural spheres, probably one-sided at this early stage of the Iron Age II. While the limited amounts of Greek pottery found in the eastern Mediterranean at this time do indicate some trade, the ‘orientalizing’ period in Greece during the Iron Age II was not reciprocated in the southern Levant (Fantalkin 2006: 204). Other jewelry finds from the Lefkandi tombs such as glass and faience beads also may have been of eastern provenience (Nightingale 2007), as are several Egyptian-style faience rings and pendants (Popham, Touloupa and Sackett 1982: fig. 3, pls. 20: 37, 32: a–c). Boardman is of the opinion that the orientalizing revolution of the Greek culture was caused by Syrian goods and styles rather than those of the Phoenicians (2006: 516), although the differentiation between the two at this time is far from clear-cut. As such, the Lefkandi earrings were more probably a south Levantine product imported into Greece, or manufactured in Greece under Levantine inspiration or craftsmen. These earrings are among the earliest jewelry pieces with granular decoration to appear in Greece after use of this technique had died out at the close of the Mycenaean period. The appearance of this type of earring in Greece is usually attributed to the Phoenicians (Kardara 1961; Higgins 1980: 221; *contra* Boardman), as is the westward dispersal of the Neo-Assyrian tri-lobed or three-armed earring (see above section 3.2.2.).

It is only with the demise of the Neo-Assyrian Empire towards the end of the 7th century, and the reinstatement of Egyptian hegemony, that local markets became more open to Greek trade (Fantalkin 2006: 202–203). Notable is the foundation of a Greek trading colony at Naukratis in Egypt and possibly also at Al Mina on the Syrian coast slightly earlier, during the 9th–8th centuries (Woolley 1938; Boardman 2006: 512–514). However, the presence of Greeks in the eastern Mediterranean towards the end of the Iron Age II did not find expression in the jewelry of this period.

The evidence for Near Eastern contacts with Iron Age Crete (Hoffman 1997) is comprised primarily of imported articles such as bronzes, pottery and various luxury or prestige items made of faience, glass, gold and ivory, as well as scarabs. Such Near Eastern imports into Crete apparently began in the 11th century, as exemplified by bronze figurines, rod tripods and inscribed bowls (see Hoffmann 1997: 109ff.; Kourou 2000), and increased during the Iron Age II, reaching their peak in the 8th century. However, Cretans themselves could have made many of these items, so it is unclear whether they were actually imports, or made by Near Eastern immigrants or Cretans inspired by Near Eastern objects. A rich assemblage of jewelry and jeweler's raw materials from the 'Tekke tomb' (Hoffman 1997: 191–246) has been attributed to a 9th century Near Eastern immigrant jeweler residing in Crete (Boardman 1967b). However, although this assemblage does reveal Near Eastern contacts, Hoffman has demonstrated that only an in-depth technological analysis can determine if this jewelry collection was made by an immigrant goldsmith or by local artisans influenced by Near Eastern iconography. The discovery of Phoenician limestone *cippi* of the 8th–7th centuries in Crete, however, does appear to indicate the presence of a Levantine community residing on the island at this time (Markoe 2003: 212; Stampolidis 2003). In addition, a tri-pillar structure in southern Crete of the late 9th–early 8th centuries was identified as a Phoenician shrine (Shaw 1989). On the other hand, it is notable that no specific Cretan elements are found in the Iron Age II jewelry of the southern Levant.

One of the more intriguing elements that appear to have arrived into the southern Levant from the west are the Type 12 Ground Down Conus Shell Beads (Fig. 35: 7) that first appeared in Greece and Cyprus during the Late Helladic/Late Cypriot period (= local Late Bronze Age), then appeared in the Iron Age I–II strata only at Tel Miqne-Ekron (Part II, sect. 7.5.6.). The use of ground-down *Conus* shells may have been a cultural tradition brought by the Sea Peoples at the beginning of the Iron Age I when these objects first appeared at the site. The discovery of these objects in the later Iron Age II strata at Tel Miqne-Ekron may be due to the preservation of an ancient tradition by their descendants or simply the mobility of such small objects as the result of post-Iron Age I building and leveling activities.[116] If so, then these objects can perhaps be viewed as a cultural and ethnic marker of the Sea Peoples/Philistines.[117]

Another object associated with Stratum V (Iron Age I) at Tel Miqne-Ekron is a Type II.2 Double Stranded Small Ring made of gold that can also be definitely linked to the Aegean region (Golani 1996a: 43–44, fig. 9: 6; see Higgins 1961: 91, pl. 13c; 1969: pl. 3c). Though this item may have reached Ekron by trade, it is more likely that the migrating Sea Peoples brought it or made it locally, and passed it down as an heirloom.

3.3. Local Styles

Several geo-cultural entities coexisted side by side within the southern Levant during the Iron Age II. At the very onset of the period, the short-lived reign of the United Monarchy soon gave way to the kingdoms of Israel and Judah, while Phoenicia in the north, Philistia in the south and Ammon, Moab and Edom in the east, all carved out their own territories.

3.3.1. Phoenician

Phoenician iconography and technology are outstanding elements of local jewelry during the Iron Age II. The accelerated Phoenician trade and colonization at this time throughout the Mediterranean basin—reaching as far as

[116] Most of the Conus shell beads appear to have originated in loci associated with the Iron Age I strata (31 such items are attributed to Strata VII–V). Their number diminishes significantly in the transition to Stratum IV of the 11th–10th century (13 objects) and only two such objects are associated with loci of the Iron Age II strata (Strata II and I, see Golani forthcoming A). This suggests that these beads were indeed an Iron Age I phenomenon, the latter examples having made their way into later strata due to stratigraphic mixing.

[117] That the Iron Age II inhabitants at Tel Miqne-Ekron were indeed Philistines is now borne out by the famous 7th century royal inscription found at the site (Gitin, Dothan and Naveh 1997).

Spain (Aubet 2001), and the resultant transmission of knowledge and technology (Niemeyer 2003), often blurred local artistic styles.

The term 'Phoenician' was coined by the Greeks to denote the Levantine traders they met, although the Phoenicians never defined themselves as such. For the ancient Greeks, a 'Phoenician' was any Levantine, not just those from what is commonly regarded as Phoenicia proper (Boardman 2006: 510). Homer, however, was often more precise, calling them 'Sidonians' (Hom. *Il*. 23,743; Hom. *Od*. 4.618, 15.118, 15.245). Just as the ancient Greeks named them so loosely, the term is often used very broadly in scholarly literature, even by Aegean archaeologists themselves, to imply the existence of a coherent ethnic group (Near Eastern = Phoenician) and to describe material cultural elements originating from the southern Levant (Hoffman 1997: 9). However, exports from the southern Levant may have been more ethnically diverse than simply 'Phoenician' (Hoffman 1997: 15). Research of Levantine art of the 1st millennium now allows for distinctions between Phoenician and North/South Syrian artistic styles, though these are limited primarily to the realm of ivory carving and its attendant motifs and techniques (Winter 1976; 1981; Barnett 1982). However, the term 'Phoenician' or 'Syro-Phoenician' is still used in a broad generic sense to define 1st millennium artistic styles and techniques that appear to emanate from the Levant. Beck (2000) has noted that Israelite and Judahite artisans essentially drew from the same iconographic and technological repertoire that is often regarded as Phoenician, thus the term should best be replaced by 'Levantine'. For the sake of simplicity, this study continues to make use of the generic term Phoenician.

The Phoenicians as a cultural group were comprised of the indigenous Canaanite populace of the southern Levant that thrived in the northern coastal plains of Israel and Lebanon and specialized in maritime trade. Phoenician art and iconography is well-known for its eclecticism (Moscati 1968; 1988; Markoe 1990b; 1990c), being characterized by portability (Markoe 2000: 150) as well as a symbiosis of local Bronze Age traditions with a large measure of innovation (Niemeyer 2004: 247–248). Above all, Phoenician art and iconography is characterized by the retention of Egyptian iconography primarily from the time of the New Kingdom, even after it had become largely obsolete in Egypt during the Third Intermediate Period (Markoe 1990a: 116). In this regard, Phoenician art may be considered as "conservative, retaining obsolete imagery because of their talismanic value over their [by then] defunct aesthetic virtue" (Culican 1991: 484–485). While Egyptianizing features were one of the main characteristics of Phoenician art, many Egyptian iconographic elements of the New Kingdom were reinterpreted or misunderstood by the Phoenicians, who adopted and assimilated them in their own eclectic manner (Kitchen 1986: 40–42; Faegersten 2005: 266). Therefore, Phoenician artwork often originates in Egyptian iconography that was assimilated into Canaanite society of the Late Bronze Age. Cypriot jewelry of the Iron Age II is nearly indistinguishable from Phoenician jewelry in form and style, sharing the same Egyptianizing iconography (Faegersten 2005: 267).

The reason for the adoption of obsolete Egyptian symbolism by the Phoenicians and its misunderstanding or reinterpretation is unclear. Some scholars have suggested that it was a deliberate attempt by a Phoenician (Sidonian-Tyrian) coalition to use the iconography of a common ally (Egypt) to project their own unity in their commercial and cultural dealings (Gubel 2000: 213). However, it is unclear to what extent the Egyptians and Phoenicians were 'allies', any more than any other culture in the eastern Mediterranean. While Phoenician ships certainly called at Egyptian ports (Holladay 2004),[118] they also docked at numerous other places as well. Perhaps the widespread use of Egyptianizing motifs in Phoenician iconography was not so much a measure of *unity*, as suggested by Gubel, but more of *continuity*. Retention of Egyptian iconography by the Phoenicians may have been a form of emulation of Egyptian culture from by-gone days of the New Kingdom in order to raise their own stature as traders. The Phoenicians may have sought to project themselves as the inheritors of the defunct Egyptian empire, creating a new empire not of military conquest, but of cultural domination by trade.

In the latter part of the Iron Age II, and especially at its very end and into the Persian period, Phoenician iconography was spread not only by trade, but also by the extensive Phoenician colonization throughout the Mediterranean basin (Niemeyer 2003; 2004). Among other objects, jewelry played a role in this propagation. Phoenician expatriates understandably retained their traditional iconographic motifs, as is evident in Phoenician-type jewelry items found throughout the Mediterranean. This is also seen in numerous examples of Punic jewelry of the Persian period, where traditional iconographic themes survived long after the motifs had become obsolete in the Phoenician homeland itself (Gubel 2000: 199).

The Phoenician element in the Iron Age II jewelry of the southern Levant is evident in nearly all the jewelry categories, and is noted in Part II within the discussion of each individual type. It is especially apparent in the more elaborate metal earrings, among them the attachment and pendant earrings (Types II.3, II.7, III.1, III.2, III.4; Figs. 11: 15–16, 12: 19–20, 13: 1–8, 14: 5–6) and composite earrings (Type IV.1; Fig. 13: 9–9), as well as the small

[118] Evidence of Phoenician trading activity with Egypt, including Judahite ceramic exports to Egypt, is documented from the 7^{th}–6^{th} centuries.

rings (Types III.4, III.7a; Figs. 16: 17–18, 17: 4–5), pendants (Types I.1a, I.1b, I.12, I.15; Fig. 22: 1–6, 31–32, 34–36) and some of the beads (Types I.3, III.17; Figs. 29: 7, 34: 1). Phoenician elements can also be identified in some of the manufacturing and decorative techniques used in their construction as well, such as certain knotting techniques on small rings of Types I.2b and III.7 (Figs. 16: 5–7, 17: 4–6).

The question of what actually is Phoenician in Iron Age II jewelry appears simple enough to answer; one need only look at jewelry from sites connected without doubt to Phoenician westward expansion and colonization, and compare it with the contemporaneous local repertoire in Phoenicia itself. However, Phoenician jewelry was not characterized solely by Egyptianizing motifs, but also incorporated the iconographic and technological milieu of the southern Levant in general. Thus, Phoenician jewelry is most accurately described as 'local'. The 'Phoenician' element is defined outside the southern Levant when it appears in more distant regions as a new or foreign element. This implies (probable but by no means certain), that it was the Phoenicians themselves who were behind the transmission of such elements, though it is also possible that other cultural groups of the southern Levant were involved as well.

In this way, 'Phoenician' jewelry is best known from excavations conducted outside of Phoenicia, usually in the west, in strata usually dating to the 7th–6th centuries and onwards, e.g., at Tharros (Pisano 1987), Carthage (Quillard 1979; 1987) and Tangier (Ponsich 1967), to name a few. Apart from some of the more recently excavated tombs at Akhziv (Mazar 2001; 2004), there is relatively little jewelry that can be clearly attributed to the Phoenicians predating the 7th century (Culican 1973), and we cannot yet characterize any jewelry as specifically 'Phoenician' prior to the 7th century. The association of local forms, iconography and techniques with 'Phoenician' sites in the west is what enables a definition of any one jewelry type as 'Phoenician'. An example of this may be seen in the Type III.2 Earrings with Solid Lunate and Basket Pendants (Fig. 12: 2–8), which have been found throughout the Mediterranean at sites connected with Phoenician westward expansion and colonization, primarily during the 7th–6th centuries. These earring pendants are also found locally at occupations of the same period at sites such as Akhziv and Tel Miqne-Ekron. These sites show clear evidence of Phoenician trade and products, or Phoenician activity in the form of local Phoenician or Phoenician-trained craftsmen (Golani 1996a: 143). The antecedents of these pendants are known among the local cultural elements of the southern Levant during the Iron Age I and early Iron Age II and may represent a miniaturized representation of a well-known cultic object (see Part II, sect. 7.1.3.). However, were it not for their existence far outside the southern Levant, these would never have been identified as Phoenician jewelry.

It should be emphasized that Phoenician jewelry itself was not necessarily exported outside of Phoenicia, but rather that Phoenician craftsmen themselves, as colonists, most likely spread Phoenician motifs and techniques abroad (Markoe 2003). This probably took place during the second and third phases of Phoenician westward expansion, as outlined by Niemeyer (2003), as Phoenician jewelry is rarely found outside of Phoenicia prior to the 7th century. The first, 'seafaring phase' of Phoenician trade and westward expansion during the 9th–8th centuries may be described in Book 15 of the *Odyssey*, when Homer speaks of a Phoenician merchant arriving with a bag of *athurmata*, or various baubles, charms and trinkets, in order to trade with the locals. These could very well have been jewelry objects. However, as noted by Winter (1995: 251–252), these were probably just mundane, non-distinctive items that would be difficult to identify as Phoenician products.

As noted by McGovern (1985: 101), the fact that iconographic motifs from the southern Levant are found in jewelry far abroad, while very few foreign traits are seen in local jewelry items, is due to Levantine (Phoenician?) control of Mediterranean shipping. These traders carried their indigenous goods to Cyprus and Greece, for example, yet returned with only a select group of Cypriot or Greek products.

Syro-Phoenician craftsmen traveling eastwards probably enriched Neo-Assyrian jewelry forms and manufacturing techniques (Markoe 2003: 210). This is seen in the increased use of the granulation technique, and it was probably the Phoenicians who were instrumental in its re-introduction in Greece as well. However, local workshops, not necessarily Phoenician, may have also produced jewelry that ended up in Neo-Assyrian collections of loot or were the source of inspiration for local artisans after their deportation into the Neo-Assyrian homeland. A case in point is the discovery of a decorated bone handle at Tell Abu al-Kharaz in Jordan from the 9th–8th centuries that appears to be the product of a local bone/ivory-carving workshop (Fischer and Herrmann 1995). Similar objects found at Hazor, and at Nimrud from a slightly later period, suggest a workshop in the southern Levant itself for some of the bone/ivory carvings in the southern Levant during the Iron Age II.

At a later stage, Phoenician-type jewelry, as well as other Phoenician-type luxury goods found in the west, were manufactured outside of Phoenicia (Markoe 2003: 210). This is suggested by the fact that most Phoenician precious-metal jewelry recovered at sites such as Tharros and Carthage was made of gold, while in the southern Levant the same forms were made of silver. Phoenician artisans abroad were dependent upon different modes of raw-material procurement, by which silver was more readily available than gold in the southern Levant itself during the Iron Age II (see section 2.6.2.1.).

3.3.2. Late Philistine

The formative stages of the Israelite monarchy at the beginning of the Iron Age II subjected Philistia to new military and economic influences, and the distinctive, developed Philistine culture of the Iron Age I slowly atrophied and assimilated into the local Iron Age II cultural environment. The archaeological and historical evidence indicates that by the end of the 7th century, Philistine culture had become so flexible and pluralistic that it lost its earlier unique cultural core (Gitin 1992: 30–31; 2000). However, recent studies have shown that certain aspects of material culture introduced by the Philistines/Sea Peoples during the Iron Age I continued in use by their descendants to the end of the Iron Age II and were adopted by the local population (Ben-Shlomo et al. 2008 and see therein for expanded bibliography). This indicates a multi-directional exchange of cultural traits. While a few small jewelry finds appear to be of western (Aegean) inspiration (see above section 3.2.4.), possibly having been brought by the Sea Peoples and integrated into the Philistine material culture, by the Iron Age II, the impact of the Philistines on the jewelry of the southern Levant is negligible. At present, no jewelry items of definite Iron Age II date can be conclusively linked to the Philistines.

3.3.3. Israelite/Judahite

While Phoenician traits in jewelry are best defined typologically and to some degree technologically, and Egyptian and Neo-Assyrian traits are well-known from actual finds and especially from pictorial depictions, what may be defined as specifically Israelite/Judahite remains obscure. Beck (2000: 177–178) has noted that the biblical passages describing Phoenicia as the source of skilled artisans have often undermined any effort to identify other local artistic innovations, and the common notion that every Egyptian motif automatically derived from Phoenicia is not necessarily upheld by the evidence. Egyptian motifs occur in the local iconography of the Iron Age II outside of Phoenicia and on both sides of the Jordan River,[119] where local artisans integrated both Egyptian and Syrian elements into one distinctive style. Thus, local Israelite/Judahite workshops that were not necessarily Phoenician could have existed. Beck (2000: 167–177) has maintained that northern Israelite workshops for ivory and bone sculpting, decorated stone vessels and ceramic cult stands apparently existed at least in the early portion of the Iron Age II. These produced objects using local imagery based on Late Bronze Age iconography that combined Egyptian, Mesopotamian and Hittite cultural iconography. Examples include cult stands with lions, sphinxes or North Syrian mythological scenes from Tel Taʿanach, Megiddo and the City of David, all dated to the 10th–9th centuries (Beck 2000: 208–210, figs. 4–5, 12), carved stone cult stands depicting lotus petals from 9th century Megiddo (Beck 2000: 210, fig 15) and another depiction of lotus petals from an Egyptian Blue scepter from Motza, dated to the 7th century (De Groot and Greenhut 1997; Greenhut 2009b).

The art of northern Israel in the Iron Age I and II is well-documented up until the destruction and annexation of Samaria in 720, but little is known of the art of Judah until the 8th century. In the early Iron Age II, Judahite art appears to have employed the same iconographic sources as those of the northern kingdom of Israel, and until the 8th century there does not appear to have been any appreciable difference between the art of Israel and Judah (Beck 2000: 178). At best, some jewelry types may possibly be identified as Israelite/Judahite, as differentiated from those of other contemporary cultures.

The results of the present study do not enable differentiation between ‘Israelite’ and ‘Judahite’ types of jewelry. To this end, it was attempted to discern if any distinctive jewelry objects were found within the geographic area of Israel/Judah during at least the first half of the Iron Age II that ceased to appear in the region of the northern kingdom after the 8th century. If such objects are regarded as ‘Israelite/Judahite’ jewelry, then they may also have appeared earlier, during the Iron Age I. Platt has already observed that various types of bone or ivory pendants, among them the Type III.1 Club Pendants (Fig. 24), the Type III.2 Plaque Pendants (Fig. 25) and the Type III.5 Mallet-Shaped Pendants (Fig. 26: 4–10, see Part II, sect. 7.4.3.) may be seen as characteristic ‘Israelite’ jewelry (Platt 1972: 158–206; 1978), also noting that these objects often occur at sites where ostentatious gold and silver jewelry is not very common, suggesting that they be regarded as ‘poor peoples jewelry’ (Platt 1972: 89; 1978). The chronological range of Type III.5 Mallet-Shaped Pendants extends from the 12th to the 9th-8th centuries, and they are found from Megiddo in the north to Lachish and Tel Ashdod in the south. Type III.2 Plaque Pendants have a

[119] For example, the well-documented artwork from the site of Kuntillet ʿAjrud (Beck 1982), generally interpreted as an Israelite or Judean shrine of the 8th century, depicts two figures of Bes, a well-known Egyptian deity, accompanying inscriptions of “Yahweh and his consort”. This shows how a classic Egyptian representation was used in a different manner by a neighboring culture, and how foreign ideas and motifs were assimilated into the local culture of the southern Levant. Locally made depictions of Bes are already known in the southern Levant and Cyprus by the Late Bronze Age, with specifically local attributes (Wilson 1975: 83-91). Representations of Bes outside Egypt are also known during the 8th century, for example at Karatepe (Cambel and Özyar 2003: pl. 16-17) and in the Achaemenid empire (Abdi 2002).

similar geographical range, beginning in the 10^{th} century and continuing until the 7^{th}–6^{th} centuries, although most late Iron Age II examples are from the south. Type III.1 Club Pendants began in the 11^{th} century and essentially continued in use until the 7^{th}-6^{th} centuries, with most post-8^{th} century examples originating in the south. Geographically, this latter type has been found on both sides of the Jordan River and from Byblos and Tyre in the north to Tel Be'er Sheva and Tel 'Aroer in the south, although most were discovered in the area of Judah and up to Megiddo in the north. Though it is tempting to identify these bone pendants with the Israelites/Judahites, it should be remembered that they have also been found at sites that are not necessarily considered Israelite, such as Tell Abu Hawam, Tel Ashdod, Tel Miqne-Ekron and Tyre. The question of what is actually an 'Israelite/Judahite' creation thus remains elusive.

The local traits in the jeweler's craft of the Iron Age II are certainly the predominant element among the jewelry of this period, and are found in nearly all the jewelry categories, although they are most evident in the simpler earrings, rings, pendants and beads commonly found from the Bronze Age onwards. Purely local features are also to be identified in some distinctive decorative traits as well, such as wound-wire decoration and bulbous knobs on elongated earring hoops that appear at the end of the Iron Age II (see Part II, sect. 7.1.).

Of the more distinctive types, several not necessarily identified as Phoenician may be seen as typical of the southern Levant and are probably the exclusive products of local workshops. Of the earrings, these include Types I.2a, I.3b, I.7, II.1a, II.1b, II.2, II.4, II.5, II.6a, II.6b, II.6c, II.8a, II.8b and II.9 (Part II, sect. 7.1.1.–2.; Figs. 9: 11–14, 21–24, 33, 10: 1–22, 11: 1–14, 17–22, 12: 1–9, 11–18, 21–25, 27–34). Most of these earrings developed out of earlier, Late Bronze Age and Iron Age I forms. Aside from the Type II.9 Tassel Earrings that appeared only during the Iron Age I–II transition (Fig. 11: 27–34), most of the more elaborate earring forms, such as Types II.4, II.5, II.6a and VII.2 (Part II, sect. 7.1.2., 7.1.7.; Figs. 11: 17–22, 12: 1–7, 15: 12–17) are typical primarily of the late Iron Age II and into the Persian period.

Among the small rings, forms distinctive to the southern Levant include Types III.5 and III.6b (Fig. 15: 19–22, 30–31), among the large rings is Type I.4 (Fig. 20: 1). The use of massive multiple rings, or bangles, also appears to have been a local innovation of the Iron Age II, though most representations of multiple rings on the ankles and the wrists of ceramic figurines appear earlier, in the Late Bronze Age (section 1.3.1., Part II, sect. 7.3.4.).

Distinctive pendants typical of the southern Levant include Types I.4a and I.4b 'Crescent' Metal Pendants (Fig. 22: 11–25), also widely dispersed throughout the Near East and the Phoenician west, the pendants and/or the motif were probably spread westward by Phoenician trade or colonization.

3.4. Summary – The Impact, Adoption and Assimilation of Various Cultural Trends

Trade and the movement of craftsmen were the two major factors defining the impact, adoption and assimilation of various cultural traits during the Iron Age II in the southern Levant, which witnessed the growth of a rich and diverse jewelry industry. The iconographical, morphological and technological roots for much of this industry are to be sought in the Late Bronze Age, when the local Canaanite culture of the southern Levant entered the sphere of 'international' economic trade that intensified the transmission of cultural influences throughout the eastern Mediterranean and the entire Near East. At this time, a strong and vibrant Egyptian influence infused numerous iconographical elements into the local cultural milieu and these became so well entrenched that they continued into the Iron Age I and to some degree into the Iron Age II as well. Local styles continued from the Late Bronze Age into the Iron Age I, although geo-political changes during the Iron Age I brought about a waning of direct Egyptian influence. During the Iron Age II, Egyptianizing features, probably adapted by local craftsmen, appear to have been propagated by Phoenician trade and colonization (Markoe 2003: 210; Niemeyer 2003).

The influence of the Phoenician, or 'south Levantine', geo-political cultural entity is pre-eminent throughout the Near East and Mediterranean and while many elements are often attributed directly to them, the Phoenicians should actually be viewed as the conduit through which south Levantine iconography, as well as actual products, was dispersed throughout the region. This transmission of cultural traits was not only a result of direct trade, but also of the immigration of craftsmen who took with them both their ideas and technical expertise.

While the Neo-Assyrians dominated the Levant politically during most of the 8^{th}–7^{th} centuries, the Phoenicians, who were their agents, appear to have had a greater cultural impact in terms of jewelry. Neo-Assyrian cultural elements were present in the southern Levant as direct Neo-Assyrian exports (rare), as inspiration on local products, and more commonly, as the result of Near Eastern craftsmen bringing local concepts into Neo-Assyria itself, which were adapted as new forms and then diffused back throughout the Neo-Assyrian realm during the latter half of the Iron Age II.

Phoenician trade and/or the presence of Phoenician craftsmen-colonists are also evident in Cyprus, Crete and the rest of the Aegean during the Iron Age II. However, the impact of these regions appears to have been minimal on the jewelry of the southern Levant, and cultural influences appear to have moved primarily in one direction—from the southern Levant outwards. The main reason for this cultural imbalance is probably to be sought in the manner of Phoenician cultural diffusion: as traders the Phoenicians propagated their own cultural products wherever they went and as colonists, Phoenician craftsmen created Phoenician-type jewelry for their respective colonies.

Though the contribution of Phoenician culture is often considered to have eclipsed the role of other cultural/political/ethnic entities existing in the southern Levant during the Iron Age II (such as Israel and Judah, Philistia, Edom and Moab), this is somewhat of an illusion, as the Phoenicians themselves shared many of the same cultural traits of their immediate neighbors. Though difficult to discern through the jewelry itself, local Israelite and Judahite craftsmen probably maintained workshops that created jewelry combining local iconography, Egyptianizing elements and the inventiveness of local craftsmen. However, these workshops are often difficult to associate specifically with any particular cultural entity in the southern Levant during the Iron Age II, as many specific jewelry types are found at sites ‘belonging to’ or ‘associated with’ a number of different cultures. This indicates a high degree of trade, or inter-cultural borrowing brought about by the movement of craftsmen and/or the transmission of ideas. Aside from a few distinctive forms that are more commonly found in the region of Israel and Judah at the end of the Iron Age I and the beginning of the Iron Age II, Israelite/Judahite jewelry basically shared forms that can also be assigned to other cultural entities in the southern Levant.

Chapter 4
Significance in Local Society

The significance of jewelry in society is a central and intriguing issue. . However, for the Iron Age II of the southern Levant, the textual sources rarely relate directly to it, if at all, and any references are often ambiguous.

From an anthropological perspective, the significance of a distinctive element of a society's material culture such as jewelry may be understood through an examination of its style. Awareness of style as a component of material culture has had a rather modest presence in archaeology since the beginning of archaeological research, and as noted by Conkey and Hastorf (1990: 1): "the notion of style is one of the undiscussed self-evident concepts upon which our historical consciousness is based". Only in the past decades have archaeologists actually dealt with the significance of style in the material culture of ancient societies and various kinds of style have been defined. At its core, *style is a way of doing something specific to a time and place* and *style involves a choice among various, functionally equal alternatives* (Sackett 1982: 63, 113–115; Hegmon 1992: 517–518). These 'choices' have also been termed 'the context of original intent' (Rudolph 1996a: 14), which refers not only to the choices made by the craftsman and/or the customer for creation of the object (see above section 2.6.3.) but also the purpose of the object itself (funerary, dedicatory, apotropaic, etc.). Style has also been defined as *a means of non-verbal communication that provides information concerning a relative identity* (Wobst 1977: 321; Wiessner 1990: 107). While such semantic definitions have more often been used in the realm of prehistoric research, in which no textual records are available to supplement the archaeological record (Sackett 1982), they may just as well be applied to later periods as well, when textual sources do exist.

For archaeologists, style is best seen as possessing an inherent *functional* significance (Hegmon 1992: 529). An artisan creating a piece of jewelry makes any number of choices in the form, techniques of fabrication and decoration in order to achieve the final visual product; another artisan working in a different place and time may make any number of different choices to achieve the same piece of jewelry, such as an earring. These choices are the expression of style that reflects both social interaction and historical context, yet their significance is to be understood in the ultimate function of the jewelry piece.

An attempt to determine the significance and function of jewelry in the southern Levant during the Iron Age II may illuminate its role in the daily life of ancient society. Jewelry appears to have fulfilled various functions that are here divided into three broad categories: social, religious/cultic and economic. Though all three of these functions may be interrelated to a large degree, in the following section, each is discussed separately and further divided into sub-categories.

Any discussion of the significance of jewelry must recognize that, excluding funerary items, most jewelry was made to be seen. Thus, the more elaborate examples of the jeweler's craft such as earrings, pendants and beads, were usually produced to be worn in the region of the head or chest where they were more visible in a frontal display, while large and small rings, in addition to beads that may be worn on the arms, hands or feet, were often less elaborate in design and workmanship as they were not as readily seen.

4.1. Social Function

The social function of jewelry is more readily apparent to us simply because these functions also exist in modern society, where jewelry may be used for self-expression, gender identity, display of wealth, status, rank and cultural and/or religious affiliation. There is no reason to suppose that jewelry did not express these same social needs in the past, though the specific messages may have been different from those of today.

4.1.1. Self-Expression and Gender Determination

Self-expression and gender determination may be seen as an expression of *'assertive style'* (Wiessner 1990), or what has also been termed *'panache'*, i.e., an emphasis of the individual (Macdonald 1990). Self-decoration is a universal element among humans throughout the world; there may be people who wear no clothes but almost none who wear no form of ornament. Various ornaments, in addition to body painting, decorative mutilation and clothing, are also an expression of style that communicates social, religious and symbolic messages, i.e., a kind of visual language (Wiessner 1990).

Visible symbols such as jewelry can be sensitive indicators of social differentiation (Blacking 1977; Roach and Eicher 1979). The individual's need for self-expression or to attract attention through adornment is one of the most obvious social uses of ancient jewelry. As noted by Sciama (1998: 1): "although from an artistic viewpoint [jewelry items] are certainly minimal objects, the mere fact of wearing them derives from a deep-seated aesthetic impulse and a need for self-expression … Among many groups it is often exercised through transformation [dressing] of the body…that [indicates] at the same time aesthetic expression and ritual behavior …[both of which are]… associated with culturally defined ideas of physical beauty and with magical [and protective] actions aimed at achieving or maintaining health and [guarding] against illness and other calamities."

That men, women and children wore various kinds of jewelry in the ancient Near East is evident from texts and imagery, as well as from the relatively small amount of gendered burials in which jewelry has been found *in situ* upon skeletons (see section 1.3.; Part II, sect. 7.1.9., 7.2.6., 7.3.4., 7.4.7., 7.5.9.). This is demonstrated in the gendered burials from the Iron Age site of Hasanlu in Iran (Marcus 1995: 2499–2500). However, use of jewelry in the present and the past was not always the same for both sexes and different age groups. Gendered asymmetry in the use of jewelry may be seen, for example, in the socially acceptable practice of males in modern western culture to wear one earring as opposed to females wearing two. In western culture, the wearing of one earring on the left ear is also an advertisement of sexual preference. Burials of the Helladic period have been shown to include some jewelry articles that were apparently gender-laden and age-defining in meaning and use (Haas-Lebegyev 2012; Pomadère 2012). In archaic Greece, men wore hair ornaments, earrings, a single anklet, but never bracelets (Boardman 1996: 4). In classical Greece, while both men and women adorned themselves with gold, men generally avoided jewelry, except, apparently, for finger-rings and occasionally gold wreaths. On the other hand, men living on the eastern fringes of Greece and who were influenced by eastern customs, commonly wore earrings, necklaces, pendants, rings and various large rings on the arms, wrists or ankles (Williams and Ogden 1994: 33).[120] In the Greek classical world, there was a clear gender division between motifs of decoration. Animals such as lionesses, stags, rams and bulls, which represent protective powers, were often found decorating women's jewelry, while fierce animals and monsters, horse riders and warriors, all symbols of strength, power and domination, decorated men's jewelry, primarily finger rings (Williams and Ogden 1994: 40–41).

Egyptian and Neo-Assyrian sources also indicate use of jewelry by both men and women, though these pictorial representations are often idealized expressions of the upper (male) echelons of society and do not necessarily reflect the situation of women or the general population. In contrast, Mycenaean and especially Minoan depictions of what are probably religious contexts are somewhat biased towards the depiction of women who are lavishly adorned with jewelry, as in the Theran frescoes (Younger 1992). However, analyses of late Mycenaean burials suggest that the more common and cheaper white bone beads were reserved for women and children (Hughes-Brock 1999: 279, 285), while other beads of more expensive materials or with colors of more significance, were usually associated with males.

Iron Age II

In the Iron Age II of the southern Levant, due to the lack of pictorial representations, the role of gender in jewelry is much less clear. Though it is certain that both sexes wore all kinds of jewelry, there is little or no evidence of any specific differentiation according to sex. Possible exceptions to this may be items of jewelry that have been found in earlier periods and continue into the Iron Age II, which were probably connected with fertility and childbirth, such as Type III.4 Shell Pendants (Part II, sect. 7.4.3.; Fig. 26: 2–3) and perhaps also Type I.4 Metal Pendants (Part II, sect. 7.4.1.; Fig. 22: 11–25), also associated with fertility and possibly also with children (Hughes-Brock 1999: 280).[121] At Iron Age Hasanlu, metal belts and armbands appear to have been reserved for men, while head and hair ornaments, especially pendant earrings, were associated with women (Marcus 1995: 2500–2501). Armlets have been found locally in both male and female burials of Iron Age II date, although Neo-Assyrian depictions as well as texts from the Old Testament appear to indicate that they were more commonly worn by males (Part II, sect. 7.3.4.2.) to symbolize status and power by emphasizing the biceps and thus conveying physical strength.

In a study of Iron Age II burials in the southern Levant, Bloch-Smith has determined that metal bangles (large rings), rings and earrings were associated with all ages and both sexes in all burial types throughout the Iron Age (Bloch-Smith 1992: 82–83). However, samples of aged and sexed skeletons with *in situ* jewelry are relatively small, so the validity of such a broad conclusion is suspect. Nonetheless, *gendered differences* in the wearing of jewelry can be discerned, as shown by Green (2007). At Tell es-Saʿidiyeh, Iron Age I burials revealed pairs of anklets on infants, children and women, and singular items on higher status males and females (Green 2007), there-

120 The wearing of jewelry by men in classical Greece was seen as a foreign, eastern custom and may even have been considered effeminate. In 401, a soldier was discharged from Xenophon's army because he had pierced ears 'like a Lydian' from Asia Minor (Williams and Ogden 1994: 33).

121 However, some literary sources indicate that men and even animals also wore crescent pendants (see in the Old Testament, Judges 8) that probably functioned in an alternate protective role. Babylonian textual sources appear to indicate that various bracelets and armlets may have been regarded as conducive to fertility and protective of pregnancy and the labors of childbirth (Stol 2000).

fore unpaired anklets as well as bracelets appear to have been neutral in terms of gender. Though these burials date to the Iron Age I, there is no reason to suppose that anklets did not function in a similar manner during the Iron Age II as well. Representations of female figurines from the Late Bronze, Iron Age I and Iron Age II also reveal that multiple anklets and bracelets appear to have been reserved primarily for women, and may also have had an added auditory value (Part II, sect. 7.3.4.).

In the Old Testament, the catalogue in Isaiah 3: 18–23 mentions various jewelry items specifically associated with women, and in several other passages, bracelets appear to have been exclusively women's jewelry (Gen. 18:16, 11; 23: 42; 24: 22, 30, 47). Rebecca is adorned with a gold nose ring of half-shekel weight and two gold bracelets of ten shekels, when the servant of Abraham comes to bring her to Issac (Gen. 24:22, 30). Though men and women alike may have worn finger rings, the signet ring or *hotam*, is usually associated with men (Part II, sect. 7.2.6.), probably because it was a symbol of authority.

Only gender identification of burials and meticulous excavation and exact positioning of items on skeletons may throw more light on gender use of jewelry in the future.[122]

4.1.2. Jewelry as a Measure of Wealth and Social Status

As jewelry conveyed identity, then one of its prime purposes was to symbolize wealth and status (Clark 1986: 7). Jewelry was often given and worn for just these purposes, and to denote honor (Boardman 1996: 5). The necessity to be identified as a wealthy person or affiliated with a certain social status or cultural group is an expression of *'assertive style'* (Wiessner 1990). Over the course of history, different cultures have associated various messages with certain jewelry items. For example, the Romans considered the wearing of earrings by men as a sign of slavery, a practice that continued throughout the Byzantine and into the Moslem periods (Ogden 2006: 16).[123]

The biblical narrative also reveals how gold and silver (supposedly in the form of items of jewelry) are expressions of wealth and status (Gen. 13:1; 25:53; Exod. 3:22; Num. 31:50; Judges 8:26; Isa. 61:10; Ezek. 16:11–13; see also Rodriguez 1997: 105–109). As heirlooms, jewelry items may have been kept 'in the family' for generations, and as such are also representations of wealth.

Burials are some of the most lucrative sources of ancient jewelry. In the past, death and the subsequent rituals involved with burial not only equipped the deceased with all manner of material goods designed to magically protect and determine status in the next world, but also to provide an opportunity to display wealth and status for the benefit of those present at the burial rites (conspicuous waste, see Renfrew 1986; Bailey 1998). For example, a male burial of the Late Bronze Age from Anatolia revealed two identical bronze anklets, 500 grams each, in position on the lower legs (Green 2007: 290). While these objects were probably ingots and could not have functioned as ornaments in life due to their size and weight, they became token ornaments at death that also served as representations of wealth and status.

In a study of tombs and their contents in the royal cemetery at Ur, even common jewelry was found to exhibit rank-related differences based on material and size. Both materials and styles that at one time were symbolic of high-ranking persons, were imitated and passed down over time to persons of lesser prestige. As prestigious materials became more common, they were used for jewelry of the lower ranks as well and, as a result, imitations of precious materials also began to appear (Pollock 1987: 257–260).

This role of jewelry as an expression of social status is as true today as in the past: a wedding ring on the finger identifies the social position of its wearer (married), and ostentatious jewelry is prominently flashed today to indicate wealth. Even in conservative societies like that of the modern-day Bedouin of Sinai, the Negev and Jordan, women wear their jewelry as part of their personal property, carrying it with them as a kind of visible 'bank' (Goren 1990–1993: 297). Among the same Bedouin, certain types of dress accompanied by specific forms and arrangements of jewelry provide information concerning the social status of a woman such as her age and marital status (idem 1990–1993: 292–295). Among the Turkana people of Africa, cowrie shells are one of the markers that distinguish married from unmarried women (Safer and Gill 1982: 88). In patriarchal societies, women are more likely to wear ornaments that display their status as married and sexually unavailable, in contrast to males who are less restricted in ornamentation, their jewelry tending to display rank and puberty, but seldom marital status. Thus, in the advertising of social status, the wearing of jewelry can be employed in a sexually restrictive sense (Green 2007: 295–297).

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[122] One of the best examples of this is the commendable publication of the Persian-period burials at Kamid el-Loz (Hachman and Penner 1999), wherein every skeleton was drawn and the exact find spot of each of the various types of offerings, including jewelry, was meticulously noted.

[123] This practice may have had its roots in the biblical world as is suggested in Exod. 21:5-6, when the Israelites are instructed to pierce the ear of an indentured servant, presumably for the insertion of an earring. Interestingly, in modern western art, pirates are often depicted wearing gold earrings, which may also suggest a lower, debased social status.

Iron Age II

During the Iron Age II, the wearing of multiple anklets (or bracelets), as opposed to single ones, was not only *physically* restrictive (up to nearly 400 grams on each leg, as at Lachish),[124] but being reserved for women, it was also socially or sexually restrictive as well, as it defined their social status (Green 2007: 26).[125]

The Neo-Assyrian reliefs commonly depict kings and gods lavishly decked out in earrings, pendants, armbands, bracelets and necklaces (e.g., Madhloom 1970: 90–93; Maxwell-Hyslop 1971: 236–237; Fales and Postgate 1992: 19, 30, 45, 70, 109, 138, 144), all of which conveyed their status. Use of gold, silver and semi-precious stones was a measure of wealth and social status and for this reason many hoards of jewelry, from the Iron Age II as well as other periods, were composed primarily of these materials. However, among the less ostentatious and less elaborate items of gold and silver jewelry, beads provide a more interesting parameter of wealth and social status.

Though beads are commonly perceived as components of a necklace, they are often found in tombs as isolated items, suggesting that this was one of the ways in which they were worn in the Iron Age II as well as other periods. Thus, even single beads were of value, possibly for individuals who could not afford more expensive, crafted items of silver or gold. Beads were not only an adornment, but to some degree may have served as a means of storing wealth, though their symbolic and relative exchange value cannot be known (Hughes-Brock 1999: 291). Thus, as objects of wealth they are commonly found in and around shrines and temples as religious offerings.[126]

In jewelry hoards of the Iron Age II and other periods that contained whole or broken pieces of jewelry, shell items are rarely represented, suggesting that they were generally not considered valuable, while stone and faience beads are often found. During the Iron Age II, bone and shell jewelry items were also very rare in hoards, indicating that these cheaper materials were held in less regard as representations of wealth and status. A good example of this phenomenon is the late Iron Age II burials at Ketef Hinnom (Barkay 1986), where no bone or shell items were evident among the jewelry, which comprised numerous silver pieces of elaborate construction reflecting the wealth and status of the deceased.

4.1.3. Sign of Rank or Office

As an expression of *emblemic style*, certain items of jewelry were certainly used as a sign of rank or office that served to highlight social distinctions. Ethnographic studies have shown that certain ceramic styles can serve to define intra-societal units such as age groups, sub-tribes and political factions (Hegmon 1992: 527). In modern society, it is often in the military that one finds specific items of recurring form that are prominently displayed in order to advertise the rank or office of an individual. These insignia are essentially a form of adornment, or jewelry.[127] The same principle held true in the past, when items of adornment, or jewelry, were often used as a sign of rank or office. In 2 Sam 1: 10, proof of King Saul's death on Mount Gilboa is provided when his crown and his 'bracelet which is upon the arm' (Masoretic translation) are brought to David. In this instance, the metal armlet along with the crown appear to have been the specific signs of his very high rank, which were not shared by others in Saul's entourage and could be identified as Saul's symbols of kingship. In the biblical story of Gideon, the Midianite kings are described as wearing crescents, pendants and purple robes (Judges 8: 26), all indications of their rank and office (see Rodriguez 1997: 109–110).

Iron Age II

In Neo-Assyrian depictions, solid metal armlets are often shown as symbols of rank or insignia worn on the upper arms of officiaries or their servants (Part II, sect. 7.3.4.2.; Bedal 1992; e.g., Fales and Postgate 1992: 19, 144). Neo-Assyrian armlets and pendants also appear to have been an essential part of the king and priest's attire, especially when they are shown engaged in ritual ceremonies with the gods, who also wear armlets.

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124 This phenomenon is not restricted to the southern Levant. The Assyrian royal tombs of the 9th–8th centuries at Nimrud contained gold anklets weighing 1600 grams each around the legs of a female (Damerji 1999), though these objects were hinged, probably intended for special occasions.

125 Though the examples from Lachish are from burials, the common depiction of multiple anklets on Bronze and Iron Age female figurines (Part II, sect. 7.3.4.1), indicates that this custom was practiced in everyday life as well.

126 In a discussion of connotations of wealth and status as revealed in the various jewelry offerings associated with the Late Bronze Age mining temple at Timna, Kertesz (1972: 37-38) suggests that beads or pendants made of shells may have been offered by the non-Egyptian workers (Midianites and the local population) who did not have beads. They collected them from the seashore, perforated them and offered them for dedication at the Hathor temple. In this sense, they were jewelry items of poor people. Another example of jewelry as a parameter of wealth and status can be seen at Uruk during the Sargonid period, where graves of lower classes often contained jewelry made of clay and shells, while graves of higher social classes contained silver, gold, lapis lazuli and other semi-precious stones (Moorey 1999: 78).

127 One needs only to look at military uniforms (primarily of the past) to see that the higher the rank, the more prominent, elaborate and lavish is the decoration.

Neo-Assyrian pictorial reliefs commonly depict bracelets with a rosette mount on the wrists of kings and queens (Part II, sect. 7.3.4.3.; Maxwell-Hyslop 1971: 246–251; Bedal 1992; Fales and Postgate 1992: 19, 45, 106, 109, 118, 144). Early in the 1st millennium, the decorated bracelet became an article of personal adornment that was used in Neo-Assyrian art to distinguish personages of various ranks (Bedal 1992: 72), while simple bracelets were often worn on the wrist by soldiers, scribes and courtiers of lesser rank (Pritchard 1954: figs. 173, 235, 623). A 7th century Neo-Assyrian relief from Nineveh illustrating Assurbanipal's campaign against the Elamites depicts an officer placing a bracelet on the hand of a spear bearer, next to whom is a pile of severed heads (Paterson 1915: pl. 54), suggesting that the spear bearer is being presented with a form of war medal for exceptional work. Lack of relevant pictorial evidence from the southern Levant does not allow similar insights concerning the use of bracelets.

Crescents, drop pendants and necklace cords were also associated, to some degree, with insignia of office for the Hebrew high priest (Platt 1979: 74–75; see also Judges 8: 26). Neo-Assyrian depictions show gods and kings wearing pendants, such as Shamshi-Adad and Assurnasirpal (see Figs. 1.2: 2; 1.9: 7) who also wore them for their apotropaic qualities.

The signet ring was often a clear sign of rank or office, as one of the purposes of such a ring was employment of the specific seal depicted on it. Signet or seal rings are seen in Egyptian depictions of New Kingdom noblemen or officiaries (Keel 1995: Abb. 212–214). Such rings are common among Iron Age II jewelry (see Part II, sect. 7.2.3.) and many of them bear the inscribed names of functionaries. In Gen. 38:18, 25, Judah possesses a signet or *hotam* that is his sign of identity or rank, and in Gen. 41:42, Pharaoh gives Joseph a ring upon his promotion to office. Similarly, in the story of Esther (Esther 3:10, 8: 2), Haman and later Mordechai, receive a ring from the Persian king, an insignia of high office.

4.1.4. Cultural or Ethnic Marker

Dress and ornament convey stylistic information that enables members of a group or sub-group to recognize one another and to make social distinctions. Material culture variations in the archeological record are often associated with ethnic differences (Hegmon 1992: 527; Jones 1997: 106–127). Due to the intensely personal and visible nature of jewelry, it is also a method of marking or proclaiming oneself ethnically and culturally, and is another expression of *assertive style,* just as people today may wear a crucifix or a Star of David to show their affiliation to a specific cultural/religious group. An ethnic 'group' may be defined as a culturally ascribed association of people sharing a real or assumed expression of common cultural traits or common descent (Marcus 1993: 159; Jones 1997: 84). Ethnographic research into the subject of particular dress and body ornaments as markers of ethnic and tribal identity to express within-group cohesion has shown that style of adornment is one of the best indicators of cultural identity inside a group or between social groups (Wobst 1977). The intuitive truism that specific forms of decoration may be related to specific cultural/ethnic groups has also been shown in ethno-archaeological studies of African tribes in the Baringo district of central Kenya (Hodder 1982: 18–21). These studies have revealed that specific types of ear decoration are related not only to a certain ethnic or cultural group, but also to a specific geographical locale, i.e., villagers moving from one area to another would change their mode of dress and decoration to fit that of the local populace.

Some types of jewelry may be shunned by one group, yet widely adopted by another. The example of men in classical Greece generally avoiding jewelry (see above section 4.1.1.) illustrates a cultural norm in which the role of gender determines how and what jewelry is worn. Another example is that the ancient Egyptians generally shunned the Asiatic practice of wearing metal anklets (see Part II, sect. 7.3.4.1.; Tufnell 1959). This was due not only to the fact that metal anklets were never fashionable in Egypt itself, but also because this was one of the ways in which the Egyptians defined their own identity as separate from that of their neighbors.

Iron Age II

In archaeology, when a specific jewelry type is found recurring at sites clearly affiliated with a certain cultural or ethnic group, it may be considered as a possible ethnic marker of that culture or group. Locally, during the Iron Age II, an example of this is the Solid Lunate with Pendant Type III.2 Earrings with Basket Pendant (Part II, sect. 7.1.3.; Fig. 12: 2–8), which is found primarily at sites directly associated with Phoenician settlement and expansion (see Golani 2010). Type III.1 Bone/Ivory Club Pendants (Fig. 24), along with Type III.2 Plaque Pendants (Fig. 25) and Type III.5 Mallet-Shaped Pendants (Fig. 26: 4–10, Part II, sect. 7.4.3.) have generally been attributed to the Israelites (Platt 1978), although they have also been found at sites not necessarily populated by Israelites. These latter items appear to be specific as a cultural phenomenon to a geographical region, and several different ethnic groups may have worn them. To the west, another possible example of ethnic-affiliated jewelry are the Mycenaean 'relief beads', which are generally not found outside Greece and appear to have been employed as insignia of some kind of religious or social office (Hughes-Brock 1999: 291; see also Nightingale 2000). When such beads were found in the Ulu Burun shipwreck, they were understood as personal property rather than trade goods, a virtual badge of identity indicating that a Mycenaean was on board (Cline 1995: 274). In a similar manner, Canaanite jewelry items found in burial contexts in Egypt are considered to indicate the presence of Canaanites themselves (Sparks 2004). Different cultures often depicted foreigners as differentiated by their jewelry, which served as a cultural or ethnic marker. Circular pendants with a 'star' often appear on local and Syrian figurines from the Late Bronze Age, Iron Age I and Iron Age II (see Part II, sect. 7.4.7.), and depictions of Syrians from the Egyptian New Kingdom are also shown wearing such pendants (Sparks 2004: fig. 3.6: D).

In the Old Testament, when the men of Israel ask Gideon to rule over them, Gideon requests from them the earrings in their possession that were taken as spoil, "for they had golden earrings because they were Ishmaelites" (Judges 8: 24). This appears to make a direct connection between golden earrings and the Ishmaelites themselves.

4.2. Religious Function

In ancient times, nearly all jewelry bore some form of cultic and/or amuletic significance, although the religious role that jewelry fulfilled is not as readily apparent as the social functions described above. As the materials from which jewelry was made as well as the form and imagery, had cultic and often amuletic/apotropaic significance for its wearer, jewelry fulfilled a religious/cultic as well as a social function.

Some of the symbolic meanings of materials and forms are known through textual sources and limited ethnographic observations. In ancient cultures and also in conservative, traditional cultures such as those of the Aborigines in Australia and the Bedouin in the Middle East, certain materials and their associated colors have a symbolic potency (see Boivin 2004; for ancient Egypt, see Baines 1985; Wilkinson 1994: 82–125). Various minerals and materials are often imbued with apotropaic and healing properties, and even their procurement and processing bears meaning (Boivin 2004: 10–16).

In ancient Mesopotamia, jewelry in tombs was considered a gift to the gods in order to gain entrance into the underworld (Pittman 1998: 88). Interpretation of the various kinds of adornment from mortuary contexts is multifaceted and must take into account idealization, metaphor, cosmologies and the political or ideological manipulation of the dead by the living (Parker Pearson 1993). Funerary jewelry was intended not only to embellish and give significance to the dead, but also to provide them with magical abilities to ward off evil powers and ensure a smooth passage and well-being in the netherworld.

4.2.1. Cultic Significance

Some jewelry items certainly had a cultic significance, reflecting the religious symbols and beliefs of an ancient culture. The cultic significance and protective or magical powers with which some types of jewelry may have invested their bearers are another aspect of their role in an ancient culture. For example, the adoption and assimilation of Egyptian religious beliefs in the southern Levant is reflected in the Egyptian-style amulets that proliferated during the Late Bronze Age and continued, to a lesser degree, into the Iron Age (see McGovern 1985; Herrmann 1994; 2006). However, to what extent the ideological content of the Egyptian imports and Egyptian-inspired objects was understood, adopted or adapted by the local population of the southern Levant is a matter of conjecture. In the Iron Age II of the southern Levant, the cultic significance of jewelry is less clear, since the religious rituals and cultic beliefs of local society are not as well-known and did not find the same level of iconographic and literary representation as those of ancient Egypt.

Some of the ancient textual evidence points to a ritualistic function for jewelry, in which the objects and the materials held powers of religious symbolism. As an example, an Akkadian text dealing with the reconstruction of a temple states (my italics): "the director of the reconstruction of the temple…shall put on clean clothes, place a *tin* bracelet on his hand, take up an axe of *basalt* [and] shall lift up the first brick" (Brinkman 1964: S. 221b).

Iron Age II

In contrast to the Late Bronze Age, the Iron Age II in the southern Levant presents a more limited repertoire of cultic objects and even fewer temples. Archaeological finds provide very little information on the cultic significance of jewelry and only limited information can be gleaned from various texts that may relate indirectly to the Iron Age II.

In the Late Bronze Age, cultic statues are often decorated with jewelry, and offerings of jewelry were common in temples and their precincts, where they were probably dedicated objects. The best example of this is the large amount of jewelry found associated with the Late Bronze Age Fosse Temple at Lachish (Tufnell, Inge and Harding

1940), both within the temple and in one of the various *favissae* in its immediate vicinity. Several hoards of jewelry and precious metals were found associated with a Late Bronze Age temple structure at Tel Beth-Shean (Rowe 1940: 19, 26 pls. 34, 37, 39, 66a; Thompson 2009) and a hoard of jewelry was found as an offering near the threshold of a side room in the 7th century Temple Complex 650 at Tel Miqne-Ekron (Gitin and Golani 2001: 36, pl. 2.10). Two additional hoards of broken-down silver jewelry and a hoard of silver ingots and *Hacksilber* were recovered near the same temple (Golani and Sass 1998; Gitin and Golani 2001). As treasured objects of wealth, jewelry items were a natural choice for religious/cultic offerings dedicated to the temple or the priests, or as voluntary offerings of precious goods such as those given by the Israelites to the priests in the desert (Exod. 32:2–3; 35:22). The religious purpose of jewelry in the Old Testament is also reflected in the attire of the high priest, which included precious stones, crowns and various pendants (Exod. 28:9–35; see also Rodriguez 1997: 110–113).

Beads commonly functioned as offerings (Andrews 1990: 185; Hughes-Brock 1999: 290–291). At Tel Beth-Shean, Levels VII and VIII of the Late Bronze Age yielded one of the largest collections of beads (1898), 92% of which were found associated with the temple precinct (James and McGovern 1993: 136). A similar situation is described at Timna, where numerous jewelry objects, especially beads, were associated with the mining temple (Kertesz 1972). The beneficiaries of all these offerings of wealth were the priests who ran the temple and officiated over its functions, as the jewelry became part of the temple coffers.

Some jewelry items were fashioned as cultic symbols themselves, or were depictions of motifs of cultic/religious nature, the significance of which is not always clear but probably to be viewed as invoking divine protection (Ornan 2005b: 133–136). During the Iron Age II, jewelry incorporated cultic motifs such as lotus flowers and lotus buds, pomegranates and crescents, in addition to the basket pendants on earrings that may have been miniature shrines (Part II, sect. 7.1.3.). Some jewelry objects, such as crescent pendants (Metal Pendant Types I.4, I.4a), safeguarded pregnant women by invoking the protection and assistance of the moon god (Ornan 2007: 231). The crescent was also worn by Canaanite priests or deities, as seen on a Late Bronze Age basalt statue standing next to a large circular basin, which has been found at Hazor (Bonfil 2011). Type III.4 Cowrie Shell Pendants with Removed Dorsum (Fig. 26: 2–3) also appear to have been a cultic symbol of some importance, judging from their imitations in precious materials and siliceous materials. In addition, some jewelry items bore depictions of cultic scenes, such as the ovoid pendant from Tel Miqne-Ekron (see Fig. 22: 7; Golani and Sass 1998: 70–72, fig. 14: 2; Ornan 2001b), illustrating a Neo-Assyrian cult scene, or the bronze plaque from Tel Dan (Ornan 2006b) bearing a North Syrian/Anatolian cult scene.

4.2.2. Amuletic Significance

For many types of jewelry, magical and supernatural protection was one of their prime functions, in addition to the display of rank, status, wealth, etc. So much of the jewelry in the ancient world had magical significance that we perhaps cannot expect to find purely decorative jewelry in the modern sense (Wilkinson 1971: 196). Amulets are of a magical, cultic/prophylactic nature and serve not only to ward off evil forces, but also to strengthen the wearer's own potential and lend him the power to pursue his desires (see Petrie 1914: 1–7). The classic examples of this are the various schematic depictions of 'eyes' often rendered on beads (Part II, sect. 7.5.3.), which were commonly worn to ward off the evil eye (see Elseworthy 1895; Eisen 1916; Spaer 2001: 77). The evil eye was dreaded throughout the ancient Near East and numerous Mesopotamian texts deal with ways to avert its negative effects (Thomsen 1992). The resemblance of cowrie shells to the squinting human eye may have led to its use as a protective amulet against the evil eye (see below Part II, sect. 7.4.3.), while other motifs, such as a clasped hand, blue beads and red tassels have also been used as protection from the destructive powers of wanton glances (Safer and Gill 1982: 140–141).[128] Amuletic pendants that were standard in Egypt in burials as well as among the living, were also worn in the southern Levant in the Iron Age II, and if they did serve a symbolic or religious purpose, their meaning may have been reinterpreted in a local sense (see McGovern 1985), which is difficult to establish due to the lack of local textual evidence. Such pendants usually take the form of Egyptian deities, human forms, flora, fauna, Egyptian hieroglyphs and various other objects (see Herrmann 1994; 2006).

The amuletic significance of jewelry may also be expressed through the material with which the object was made, in addition to its form and color. Special stones that were worn and used to prevent miscarriage and to facilitate birth are known from many cultures and periods. Ancient Babylonian texts mention several kinds of colored stones that were believed to have protective powers against miscarriages and the birth of abnormal children (Stol 2000: 49, 166). The texts specify which types of stone must be used and how a woman was to tie or bind them on

[128] From the 1st century, the Greek historian Strabo (*Geographica* Book 7: 3: 4) mentions that the women of Upper Egypt wore shells around their necks as protection against what may be translated as 'fascination'. In Latin, 'evil eye' is translated as *oculus fascinus* (Safer and Gill 1982: 141).

her neck, hands, feet or pelvis during the first months of pregnancy in order to prevent miscarriage. In the Jewish Talmud, the 'preserving stone' (*even tᵉqūmā*), is prescribed to protect women from miscarriages, while infertile women are instructed to wear the 'blood stone' (Greek *himōs* or hematite) in order to induce pregnancy, a custom that was widespread among European Jewry into the medieval period (Stol 2000: 50, n. 19).

Among the sea-faring Greeks, various kinds of stone amulets were commonly prescribed for protection against storms, shipwrecks as well as the protection of children at sea. Stones were used against all kinds of maladies; softer ones being ground to a powder, the harder ones worn as amulets (Clark 1986: 83). Pliny the Elder records numerous uses of minerals for the cure of a variety of ailments (*Natural History*, Books 36–37).

The religious symbolism of color is revealed in ancient Egyptian textual sources and finds a most vivid expression in various modes of Egyptian art, among them jewelry, in which colorful bead and inlay compositions are so characteristic. Though Egyptian art contained a wide range of tones, the actual palette was composed of six basic colors: red, blue, yellow, green, white and black, each of which possessed symbolic attributes and were often attributed with certain deities (Baines 1985; Wilkinson 1994: 104ff.). Red symbolized abstract concepts of life and regeneration that were associated with the physical phenomena of fire, the sun and blood, yet red could also signify anger, destruction and death. Blue was naturally associated with the heavens and water and was thus also tied to the concept of fertility, fecundity and all that grows. Yellow was also associated with the sun and was therefore linked to the eternal and the imperishable, such as the golden flesh of the gods whose radiance held a powerful symbolic significance (see Winter 1994). Black was associated with night and therefore death, the underworld and funerary deities yet because of its association with the fertile soil of the Nile delta, could also represent fertility, regeneration and magical healing properties. Green had an obvious association with vegetation and thus life, resurrection, health, healing, regeneration, vitality and positive protective aspects in general.[129] White symbolized purity, sacredness and cleanliness, and as a solar hue, white could also be used as an alternative to yellow. The word for white also denoted silver and was considered representative of the moon and the bones of the gods alongside yellow (gold) that was associated with their flesh. The symbolism of these colors was often used interchangeably and each possessed a varied range of hues.

New studies of Late Bronze Age Aegean burial practices suggest that the color aspect of shininess and luster was an important consideration in the choice of grave goods such as jewelry, so that shiny objects, possibly representing life and regenerative powers, were preferred over objects of a dull hue (Gillis 2012). However, if funerary assemblages are not compared with those from other types of context, the validity of such conclusions is questionable.

Among the modern-day Bedouin, a wide variety of materials are employed for pendants and beads, and it is not the nature of the material that is important (even plastic may be used) but the color, and the properties and powers that the color invokes (Mershen 1991: 172–173). Strung necklaces of the Bedouin may be composed of beads of different materials, shapes, sizes and colors, combining a number of elements thought to possess apotropaic, attracting or healing properties. Such necklaces are composed according to the particular needs of the person wearing them, and may be very revealing about the life of the wearer. Beads and pendants of certain colors represent a remedy for specific ailments: heart-shaped green pendants are believed to protect against the bad effects emanating from menstrual blood, dark red attracts attention, light red is used to promote fertility. Brown- and white-banded beads are worn for enhance marital prospects, brownish-red beads are worn against inflammation of the ear and throat, opaque white beads to increase lactation, certain yellow beads prevent jaundice or hepatitis, and a variety of blue beads are worn against the evil eye. Spherical beads of carnelian are said to be good for ophthalmic troubles and at the beginning of the 20th century CE, carnelian was locally used as a cure against conjunctivitis (MacKenzie 1912–1913: 63). Stones of blue with red veins are helpful in cases of excessive nose bleeding — the stone is heated then pressed on the middle of the forehead whereupon the bleeding ceases (Macalister 1912b: 104; Goren 1990–1993).

Along with their colors, the shapes of many items also hold specific properties or powers. Perforated stone pebbles are still worn by shepherds in Europe to ensure success in the lambing season and to prevent foot-rot in the flock; by horse-breakers to ward off evil influences from the horses, and as a prophylactic against nose-bleeding and injury from cattle. When hung over an animal pen, such stones guard against witchcraft or disease (Kertesz 1972: 8). The properties of a stone as a good luck charm are succinctly summed up in Proverbs 17: 8: "A gift is as a precious stone in the eyes of him that hath it, withersoever he turneth, he prospereth". Eisen (1916: 2) notes that in Brittany of his time, the peasants possess numerous necklaces of antique beads, many of them of the 'eye' type, which are handed down for generations.

At the beginning of the 20th century CE, Macalister (1912b: 449) noted that "probably nine-tenths of the (local) natives; Jew, Christian, and Muslim wear an amulet of some kind". He further writes that (1912b: 104) "many

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[129] The appearance of green stone beads at the dawn of agriculture in the southern Levant has been tied to the increased importance of vegetative growth in human lifestyles of this region during the Neolithic period (Bar-Yosef Mayer and Porat 2008).

beads were not mere ornaments, but had a magical value as well, as they often have in modern Palestine. I was told that a carnelian tooth shaped pendant was worth up to 40 francs as an amulet against certain kidney disorders". Certain shapes symbolize body parts, such as Type III.4 Pendants of Cowrie Shells with Removed Dorsum (Fig. 26: 2–3), hence these are used as fertility charms even today (Goren 1990–1993).

The wearing of a singular bead may also have functioned as an amulet of sorts. An example of this is the name bead – a long bead made of stone called a *seweret* bead in Egypt, found primarily in the Late Bronze Age II (Kertesz 1972: 30–31),[130] and derivates of these beads are found in the Egyptian Third Intermediate Period and later (Andrews 1990: 196–197). Each bead bore a name inscribed in hieroglyphs and as depicted on males in Egyptian wall paintings, they were strung on a cord singly or flanked by a few beads, and worn closely tied to the throat (Andrews 1990: 186–187, fig, 183). The stone most often used for these beads was carnelian.[131] Such beads have been found at Timna and other sites of the Late Bronze Age and are clearly of Egyptian inspiration. In many tombs and single burials of the Early Bronze, Middle Bronze, Late Bronze and Iron Ages, single long carnelian beads or just a plain single bead, are found as isolated items. Though these usually do not bear names, they may represent the Egyptian custom as it was practiced locally. The presence of singular beads in burials during the Iron Age II would appear to support their interpretation as a form of amulet in addition to decoration (Bloch-Smith 1992: 81).

Ancient Akkadian texts speak of the use of jewelry for healing. Bracelets were apparently used in healing rituals, as suggested by the following examples: "(to cure him) you place a bracelet of shiny gold on his hand" (Brinkman 1964: S. 221a) or "if both his feet are paralyzed, …a bronze anklet shall be placed (?) on him" (idem: S. 221b).

Sometimes jewelry may be adopted for magical protection, especially in times of crisis and vulnerability. Ethnographic research in Yemen has shown that the Jews, as a vulnerable ethnic and cultural minority, often adorned their brides and babies with types of beads that were otherwise associated with Muslims, believing that these objects had more powerful protective powers (Garner 2006: 67).

Iron Age II

Various forms of amulets are found among the jewelry of the Iron Age II in the southern Levant. The special shapes of the various metal, stone, bone, ivory, shell and siliceous pendants (see Part II, sect. 7.4.) may have conferred protective powers, although these remain unknown.

The significance of color in the jewelry of the Iron Age II in the southern Levant has been explored by Limmer (2007), who regarded certain colors such as blue-green, blue-purple and red to be culturally significant. These colors are identified with the *tkhelet*, *argaman* and *tolaʿat shani* of the Old Testament, which were associated with the dress of the high priest and the tabernacle ritual. These colors are recurring features in the jewelry of the 8th–6th centuries, yet whatever symbolic or apotropaic value they may have had remains unknown. While these three colors were indeed common in the beads and pendants of the Iron Age II in the southern Levant, they were not the only ones, and these colors were common in Egyptian jewelry as well (Baines 1985; Wilkinson 1994: 104ff.). The color of any metal jewelry, whether gold, silver, copper alloy or iron, may also have had cultural and cultic significance, as do other common colors such as white, green, black, yellow and light blue. Though color preferences probably did exist and may have had symbolic and cultural significance, the ancients likely assigned symbolic importance primarily to what was available and then to their own culturally specific set of religious/cultic beliefs.

4.3. Economic Function

The materials used for jewelry production were part of a larger economic system in which the value and use of various goods was often affected by the changing socio-economic and political realities that shaped the needs and functioning of a society. As items of personal wealth with religious and cultic value, jewelry also played an economic role in everyday life and could be used as payment in various types of transactions.

4.3.1. The Use of Jewelry as an Element in Commerce

In pre-industrial societies, the value of any medium of exchange is probably to be linked to its social and/or cultic-religious significance or to its symbolic importance. In the past, the distinction between ornaments and currency was often blurred, as has been shown in Lassen's study of bronze weights (2000), and jewelry was ultimately used

[130] A group of terracotta fertility plaques from the Late Bronze Age may possibly depict the use of such beads, along with a crescent pendant on a fertility amulet (Ornan 2007: 217, figs. 1, 3).

[131] One example of such a bead made of terracotta is known from an LB tomb near Akko (Ben-Arieh and Edelstein 1977: 70, pl. 8: 3, fig. 14: 5).

as a measure of value (see Graeber 1994). Complete gold jewelry in the form of simple earrings, spiral rings and bracelets that appeared as 'sets' from an intact Late Bronze Age tomb in Cyprus has been weighed, revealing that each of these jewelry types conform to a known weight standard that existed in Cyprus at that time. This suggests that these articles may have been produced as items of convertible currency (Goring 1996: 33–34).[132] In a study of numerous textual references to 'rings' in the Ur III and Old Babylonian periods, Powell (1978) has shown that large rings were regarded as a form of money in which metal was stored in convenient form for use in trade. This assumption has generally been upheld by other scholars (e.g., Betlyon 1992: 1076–1078; Snell 1995; Lassen 2000: 241–243; Green 2007: 295–296). Recently, Brody and Friedman (2007: 104) have also suggested that heavy large metal rings from Tell en-Naṣbeh may conform to a Phoenician weight standard. Such heavy metal bangles were common in Judah during the Iron Age II and may have served as a kind of exchange standard based on the value of the weight of the metal.

As a commodity of value, jewelry was used in commerce for various transactions, its worth determined by its inherent symbolic qualities or by the intrinsic value of its material.[133] Various types of jewelry, whether due to their material, color, symbolic significance or even craftsmanship, may have been bartered, though their value remains unknown to us. Such jewelry may have been traded whole or broken down. In Egypt during the Old Kingdom, 'working women' were usually paid in jewelry (Fischer 1989: 16). In addition, jewelry found dedicated in temples and shrines is also a measure of its economic worth.

The material most commonly used as a standard of value (currency), and from which coins were made, is metal, primarily gold, silver and copper, occasionally iron. The second most common material was shell. Shells have been used as money throughout history all over the world (Safer and Gill 1982: 49–83) and it has been proposed that shells functioned as money in the ancient Near East as well (Tubb and Dorrel 1994: 63; Bar-Yosef Mayer 2005a). Cowrie shells are one of the most popular types of shells used as money, especially in Africa, up until modern times.[134] In addition to their function as amulets that added to their value, cowries may have been used as a form of money or currency during the Iron Age alongside other materials such as silver. Neo-Assyrian texts also mention cowrie shells in lists of precious items (Fales and Postgate 1992: 87–88, 128–129).

As to the intrinsic value of the material from which jewelry was made, precious metal by weight, especially silver, was used in the ancient Near East as early as the 3rd millennium as a means of establishing a standard for assessing the worth of material objects to facilitate barter exchange. Precious metal thus served as a means of payment, security for the purchase of property and goods, and for settling debts and taxes (see Balmuth 1975: 294–295; Powell 1978: 226–227; 1996: 227–228; Frankenstein 1979: 272; Snell 1995: 1490–1493; Gitin and Golani 2001: 36–37. For example, an Assyrian text relates that "when (personal name) hands over to (personal name) the silver, a debt secured by gold rings and gold bracelets, he may take back the rings and bracelets" (Brinkman 1964: S. p. 220b), demonstrating that the silver was used as a form of payment, while the gold rings were employed as security.

Iron Age II

Currency (such as metal bullion) used according to specific weight standards is generally understood to be money (Seltman 1965: 1; Gitin and Golani 2001: 36–37), though this view has been both challenged (Kletter 2003; 2004b) and defended (Gitin and Golani 2004). Pieces of silver, apparently used as payment, are referred to in Neo-Assyrian annals (Fales and Postgate 1992: 78, record no. 60), which also mention scraps of silver that were collected together and kept in a chest as wealth (Fales and Postgate 1992: 95). The use of silver as currency is also attested in the Old Testament, where units of weighed silver, or *sheqalim*, were used as a weight standard for payment in the sale of property, such as in the purchase of the Cave of Machpelah by Abraham (Gen. 23:15–16) and in the purchase of the hill of Shemer (Samaria) by Omri for two silver talents (I Kings 16: 24). Metal jewelry or pieces of jewelry may have been used directly as currency when Jacob paid 100 *qšyth*, often translated as 'pieces of money' or 'ornament', to buy a plot of land from Hamor of Shechem (Gen. 33:19). The marriage jewelry of Rebecca that was given

[132] However, no comparable equivalence in weights of jewelry against a set and specific weight standard has yet been discovered for jewelry or for *Hacksilber* during the Iron Age II (Gitin and Golani 2001: 39). In the case of the jewelry from Cyprus, Goring has proposed that this was the result of the goldsmith cutting off set lengths from a gold rod or wire, then forming identical sets of jewelry from these pieces (Goring 1996: 33). Whether this was done with the thought of using the end product as a means of currency is feasible, though at present remains unproven.

[133] For example, carefully wrought and colorful beads have from time immemorial constituted transportable items of barter, i.e., money; the Indians of North America traded Manhattan for beads and 'trade' beads were used among the wandering merchants of Central Asia and North Africa (Sciama 1988; Younger 1992: 268; see also Engle 1990).

[134] Historical records show that by the 17th century CE, cowries had become a kind of standard currency throughout West Africa. Returning from the Far East, European ships brought tons of cowries as ballast that were then traded for slaves and ivory from West Africa that were destined for Europe and the New World. However, the tremendous amount of cowries brought by the Europeans into Africa soon caused inflation and a sharp decline in their value. Because of their success in the African trade, cowries were brought into the New World by the Europeans, where they were readily accepted by the Indians (Safer and Gill 1982: 51-53).

to her by Eliezer, consisting of a nose-ring and two bracelets, is specifically stated as being half a sheqel weight (the nose ring) and ten sheqels weight (the bracelets; see Gen. 24:22). This indicates that the worth of these jewelry items was evaluated by their weight.

With the expansion of the Neo-Assyrian empire, silver became the generally accepted means of currency by the 7th century (Frankenstein 1979: 287; Postgate 1979: 218; Gitin and Golani 2001: 36–37). Currency used according to a specific weight standard may be regarded as money (see above) and smaller units of currency, such as silver cut or broken off from a larger piece (*Hacksilber*), may be inferred from the term *betza kesef*, or broken silver (Judges 5: 19). This appears to have been the biblical term for money itself (Meshorer 1976: 52). Broken or cut silver jewelry may also have functioned in a similar manner, and the individual pieces weighed and valued against a weighed standard,[135] or it may have been melted down to form ingots that were then cut. The weighing was probably carried out on small scales suspended from a balance beam. Such an apparatus was first introduced into Egypt during the 18th Dynasty and was in common use throughout the New Kingdom (Skinner 1967: 33), and remnants of a bone balance beam were recovered on the floor of a residential room at Lachish, destroyed during the mid-8th century (Barkay 1996). Metal and bone scale pans, usually about eight cm in diameter and with at least three stringing holes around their circumference, are found throughout the Bronze and Iron Ages locally as well as in neighboring lands (Barkay 1996: 78ff.). Small dome-shaped weights, often inscribed, and grain-shaped weights are common during the Iron Age II, and are occasionally found in direct association with the scale pans (Kletter 1991; 1994).

[135] The whole process of payment as a commercial transaction using silver balanced against a weight standard is also described in the biblical narrative of the prophet Jeremiah's purchase of a field at Anathot (Jer. 32: 8-14).

Chapter 5
Summary and Conclusions

As one of the many types of objects recovered during excavation, ancient jewelry may be investigated using the same methodological tools employed in archaeological research for other forms of material culture. This study has shown that many jewelry objects have a very broad chronological range spanning centuries if not millennia. In addition, the conservative nature of jewelry and the fact that as a valuable item it was often kept as an heirloom, does not enable its use as an effective or reliable tool for chronological dating. Analysis of the data from the typology presented here has revealed that even jewelry with a distinctive form and manufacturing technique may have a chronological range of several centuries. For example, Type II.1a Earrings (Fig. 9: 1–17), which have been found at such sites as Tel Miqne-Ekron, Ketef Hinnom and Kamid el-Loz (the latter site in Lebanon), have a chronological range from the 7th to 5th centuries, while Type II.6b Earrings (Fig. 11: 11–17), found at such sites as Tel ʿIra, Ketef Hinnom and Tel Michal, have a range from the 7th to 4th centuries. This phenomenon is not limited only to earrings, but is also true for other categories of jewelry such as Type III.12b Siliceous Beads (Fig. 32: 4–7), found at such sites as Nazareth, Akhziv and Tel Miqne-Ekron, which have a range from the 11th to 7th centuries.[136]

The research potential of ancient jewelry has not been realized simply because there has not been any recognized and effective means to comprehend it as an element of archaeological material culture. Through the creation of an inclusive typology using published and unpublished data of Iron Age II items from the southern Levant, in addition to published data from Jordan and Lebanon, this study now provides a means to classify and understand ancient jewelry. *One of the major aims of this study has been the organization, presentation and analysis of data in a typological structure to facilitate future reference and study.*

The present typological scheme (see below Part II) has created a detailed classification system that divides jewelry into five general categories according to their assumed function (earrings, small rings, large rings, pendants and beads), with a further subdivision according to specific form and/or material, providing specific contextual, chronological, cultural and technological information for each type. This apparatus has proven an effective means to classify the entire range of jewelry types found in the southern Levant from the Bronze Age to the Persian period. It is simple to use and reference, yet flexible enough to be continuously and easily updated and expanded.

A second, but no less important goal of the typological structure was to define the relationship between the type of object and the material and technique by which it was made, and thus to understand the stylistic and technological possibilities of each material and the development of the jewelry categories under discussion. Furthermore, defining the relationship between the form of an object and its material and technology has led to insights into how jewelry and its materials may be a reflection of changing economic forces (section 2.6.2.). For example, though faience was in use already during the Early Bronze Age, with the accelerated development of silicate technologies during the Late Bronze Age and again during the Iron Age II (section 2.5.3.), numerous bead and pendant forms could be made of siliceous materials instead of stone or metal. This potential presented new options to the ancient jeweler, not only in the range of stylistic possibilities, but also in the amount of items that could be produced. For example, a quantitative analysis of the Iron Age I–II siliceous beads from Tel Miqne-Ekron has shown a large increase in the use of more easily produced faience over glass in the creation of the same bead forms (section 2.6.1.). In addition, silicate technology enabled a much greater variety of forms, colors and decorative techniques than stone.

5.1. The Typological and Technological Development of the Jeweler's Craft – An Overview

Though the focus of this study has been the Iron Age II in the southern Levant, many of the topics dealt with are of a much broader scope and relevance. The significance of jewelry and the development of the jeweler's craft cannot be understood through the information available for this period alone and must be examined within a broader geographical and chronological context.

As has been stressed throughout this study, *the jewelry of the Iron Age II in the southern Levant was part of a developmental continuum that extended from the Bronze Age and into the Persian period.* Throughout this extended time span, which witnessed the emergence and development of new cultures such as the Phoenicians and the Israelites, and the growing and waning of Egyptian involvement in Canaan, many of the same types continued,

[136] For more examples of distinctive forms with a clear yet extended chronological range, see for example, Earring Types II.3-5 (Fig. 10: 15-22), III.2 (Fig. 12: 2-7), VII.1 (Fig. 14: 6-11), Small Ring Types III.4-5 (Fig. 15: 17-22), Type I.3 Large Rings (Fig. 19), I.5 (Fig. 20: 2-3), Pendant Types I.1a-b (Fig. 22: 1-6), III.1-2 (Figs. 24-25) and III.5 (Fig. 26: 4-10).

some evolved, new types were introduced and others disappeared. The morphological and technological development of Iron Age II jewelry in the southern Levant was a natural outgrowth of the jewelry of the preceding Bronze Age and Iron Age I. Similarly, the local jewelry of the Persian period was largely a continuation of morphological and technological traditions that became prominent towards the end of the Iron Age II.

The typological development of jewelry was intrinsically tied to its technological development: what exists depends on what is possible. In addition, the specific typological development of earrings, small and large rings, pendants and beads, as discussed in detail in Part II, sect. 7.1.8., 7.2.5., 7.3.3, 7.4.5. and 7.5.8., was also connected to socio-political developments throughout this extended period. For example, some Neo-Assyrian jewelry styles that appeared locally towards the end of the Iron Age II (e.g., Type II.1b Earrings with Solid Drop-Shaped Attachment, Fig. 9: 1–17) appear to have been derivates of earlier local forms that had made their way to Assyria with the deportees and then returned to the southern Levant as Neo-Assyrian products (see section 3.2.2. and Part II, sect. 7.1.8.).

The technology available during the Early and Middle Bronze Ages determined that most of the jewelry in the southern Levant at that time was of simple, basic forms made of metal, a limited variety of semi-precious stones, faience, bone, ivory and shell. It was only at the very end of the Middle Bronze Age and especially during the Late Bronze Age, that local jewelry began to undergo accelerated typological and technological development. This is illustrated, for example, in the rich hoards of gold and silver jewelry from Tell el-ʿAjjul and the varied jewelry from the Fosse Temple at Lachish. This was an outcome of the increased trade and the internationalized economy of the Late Bronze Age that resulted in the movement of materials, goods and craftsmen, and the diffusion of technological knowledge and expertise throughout the eastern Mediterranean and the Near East. The growth in international trade also made available a larger amount and variety of materials. Developing technologies such as the casting of small items, soldering techniques and granulation, in addition to the introduction of glass and silicate technology, enabled the creation of new forms and decorative techniques. This is apparent, for example, in the numerous forms of jewelry found in tombs and habitational strata at sites such as Megiddo and Tel Beth-Shean.

The political and cultural hegemony of Egypt over Canaan during the Late Bronze Age is strongly apparent in the local jewelry of that time, typified by the extensive use of Egyptian forms, motifs and techniques alongside materials such as gold and an array of semi-precious stones that may have been imported from Egypt. This is illustrated in the diverse array of jewelry from the Fosse Temple at Lachish. Alongside an Egyptian-inspired industry, a local tradition also flourished. This is best exemplified in the rich and varied jewelry assemblage from Deir el-Balaḥ, where typically Egyptian jewelry was found alongside purely Canaanite forms.

Despite the collapse of the palatial economies and the ensuing turmoil in the eastern Mediterranean with the onset of the Iron Age I, the technological knowledge and the typological repertoire of local Late Bronze Age jewelry was not lost. While in regions such as Egypt, the Aegean and most of the Fertile Crescent there appears to have been very little jewelry production, in the southern Levant the manufacture of jewelry continued, albeit on a more modest scale than in the Late Bronze Age. The predominance of gold in the Late Bronze Age gave way to silver, as is seen in numerous silver hoards of the Iron Age I such as those found at Ashkelon, Tel Beth-Shean, Megiddo and Dor (section 2.6.2.). The waning cultural hegemony of Egypt over Canaan continued to linger in the use of materials, techniques and iconography acquired in the Late Bronze Age, although Egyptian-style jewelry slowly died out during the course of the Iron Age I. Only a few forms, such as Type I.4 Crescent Metal Pendants (Fig. 22: 11–25) and Type II.4 Stone Lotus Bud Vessel Pendants (Fig. 23: 13–17), continued into the Iron Age II, though in a very limited manner. On the other hand, new jewelry forms, such as Type II.9 Earrings and Type III.1 and Type III.5 Siliceous Pendants began to appear towards the end of the Iron Age I and at the beginning of the Iron Age II, a phenomenon possibly connected with the arrival and consolidation of new cultural groups in the southern Levant at this time. Other typological changes from the Iron Age I to the Iron Age II are small and subtle, such as earring hoops that were usually opened at the top began to be opened at the side.

As is evident, for example, in the gold jewelry items from the Tawilan hoard in Jordan, technologies such as granulation, which had been nearly dormant throughout most of the Iron Age I, began to reappear towards the end of this period. At the same time, the casting of small metal jewelry items such as earrings, a common technique during the Late Bronze Age, began to be replaced by the more economical mechanical forming. This is seen, for example, in precious-metal earrings of the late Iron Age I (e.g., Type II.9 Earrings, Fig. 11: 27–34), which were fabricated from several pieces made of sheet-metal, wire and granulation, examples of which were recovered at Ashkelon, Tawilan and Tell el-Farʿah (S).

During the Iron Age II, the lack of Egyptian hegemony, the formation of new kingdoms and the western expansion of the Neo-Assyrian empire enabled the Phoenicians to rise to prominence and brought about a resurgence of trade throughout the Mediterranean basin. Egyptian New Kingdom iconography, though by now largely obsolete in Egypt, was integrated by the inhabitants of the Levantine coast into an eclectic style that is generically labeled 'Phoenician'. Intensified trade spurred the artistic innovation of Phoenician culture, whose contribution to the creation of new jewelry forms and the spread of jewelry technology and iconography throughout the Mediterranean was significant. From the 8th century, the *pax Assyriaca* enabled materials to become more widely available. Jewelry production increased, a wider variety of forms appeared and the technology became more complex and sophisticated.

Towards the end of the Iron Age II and into the Persian period, the accelerated development of processing and fabrication techniques enabled the construction of truly elaborate jewelry comprised of numerous parts utilizing sophisticated manufacturing and decorative techniques. For example, technological advances in forming and soldering techniques enabled the construction of elaborate hollow earrings of sheet-metal richly adorned with wire and granulation, examples of which were recovered at such sites as Tel Miqne-Ekron, Ketef Hinnom and Kamid el-Loz in Lebanon.[137] *Hammering and the sophisticated use of sheet-metal became more prevalent during the second half of the Iron Age II and in the Persian period, thus making more efficient use of precious raw material*. This is clearly evident in the silver jewelry assemblages revealed at such sites as Tel Miqne-Ekron (late 7th century), the rich and elaborate silver jewelry found at Ketef Hinnom and Tel ʿIra (6th century) and the large amount of exquisite silver jewelry found in burials at Tel Michal and Kamid el-Loz in Lebanon (6th–4th centuries). The recovery of so much more elaborate jewelry from the end of the Iron Age and especially in the Persian period, suggests that sophisticated jewelry was becoming more available to the general populace and that local workshops continued to produce jewelry during the 6th–4th centuries that was based on forms and techniques prevalent during the late Iron Age II.[138] Although the jewelry of the Persian period had direct antecedents in the Iron Age II, it is often typified by a higher standard of craftsmanship and the creation of the same forms on a smaller scale, as is evident in the assemblages recovered from Tel Michal and Kamid el-Loz.

5.2. The Archaeological and Cultural Context

Jewelry from controlled archaeological contexts such as isolated finds among stratified deposits, jewelry from tombs, hoards and foundation deposits, and jewelry offerings (as in temples) have different uses and meaning (section 1.2.).

Single items originating in stratified occupational deposits are relatively rare simply because valuable jewelry was generally not lost or discarded, and any such finds are representative of the types of jewelry worn daily (section 1.2.1.). The accumulated evidence clearly demonstrates that jewelry from tombs is the most common, as it comprised an intentional deposit representing a conspicuous display of wealth, status and rank, in addition to the amuletic powers of the items, all of which were intended to assist the deceased in the afterlife (section 1.2.2.). Prominent examples of this display of wealth were found in the rich tomb deposits at Lachish, Ketef Hinnom and Tel ʿIra, for example. Jewelry hoards are amalgamations of wealth that could have served a number of purposes (e.g., a public or private treasury, a jeweler's stock in trade, etc.; section 1.2.3.). In addition, the evidence from Tel Miqne-Ekron indicates that the jewelry in foundation deposits and offerings also had an added cultic/religious value, as it was dedicated and essentially 'sacrificed' (section 1.2.4.).

The general archaeological context of jewelry is no less important than its specific findspot. Examination of the database in general highlights the fact that the types of jewelry and the materials from which they were made are often quite different if they originate in small rural sites, which produce little or no jewelry, or large urban centers where elaborate jewelry was probably made and therefore more common (section 1.2.1.), showing more variety and greater technological skill. Jewelry from large urban centers is usually recovered in burial deposits associated with the site.

A review of jewelry's *cultural context* shows how it was employed, by whom and for what purposes (section 1.3.). Evidence is gleaned from artistic representations (figurines, statues, paintings and reliefs, see section 1.3.1.-2.) and *in situ* finds on skeletons (section 1.3.3.), which highlight the variety of jewelry worn by men, women and children. Part II presents more detailed discussions of the specific cultural context of earrings (Part II, sect. 7.1.9.), small and large rings (Part II, sect. 7.2.6., 2.3.4.), pendants (Part II-.2.4.7.) and beads (Part II-.2.5.9.). The manner in which jewelry was used during the Iron Age II appears to have been similar to that in neighboring lands, cultures and periods, yet some differences are apparent. For example, in contrast to ancient Egypt and Mesopotamia, *no jewelry in the Iron Age II southern Levant was exclusively funerary in origin and intent.* The jewelry that accompanied the dead was generally the same as that worn in life, as no appreciable difference was found (except for amount) between the types of jewelry found in tombs and those in stratified occupational deposits.

137 See also Earring Types II.1a, II.4-5 (Figs. 9: 1-17, 12: 17-22).

138 See also Type II.1a Earrings (Fig. 9: 1-17), Small Ring Types III.4-5 (Fig. 15: 16-21) and Type I.3 Large Rings (Fig. 19).

5.3. Materials and Techniques of Manufacture and the Jeweler's Craft

The diverse array of manufacturing techniques and the technological development apparent in the manufacturing processes of the jewelry are also an expression of social complexity in Iron Age II society. A study of the materials and techniques of jewelry manufacture is integral to an understanding of the jeweler's craft at this time (Chapter 2).

5.3.1. The Relationship between Material and Form

The typology (Part II) *demonstrates that the materials had a direct relationship with the type of jewelry produced*. Certain materials were found to naturally lend themselves to the fabrication of specific forms and decorative techniques. The technological possibilities for the craftsman in the working of stone (section 2.2.2.), for example, were very different from metal, glass or faience (section 2.1.2., 2.5.2.). The durability of materials was also directly connected to their use, as they had to endure daily wear and tear (section 2.6.3.). Thus, siliceous materials such as glass or faience were rarely used in the fabrication of earrings and rings, but were commonly used for beads and pendants, while metals were used to manufacture earrings, small and large rings, as well as pendants and beads. Among the metals, silver and gold were used in the construction of all manner of simple and elaborate jewelry pieces, while copper, as a cheaper substitute, was more commonly used in the fabrication of simple forms. Iron, due to the difficulty to work with it and its tendency to oxidize quickly, was only occasionally used and then usually for simple rings. Bone, ivory and shell were utilized primarily in the manufacture of beads and pendants.

5.3.2. Sources, Trade and Economics

The broad range of materials at the disposal of the craftsman provides evidence of trade contacts during the Iron Age II and is also a measure of the changing socio-economic and political realities of the times (section 2.6.2.). *Most of the materials used in jewelry manufacture during the Iron Age II were locally available, except for silver, gold, ivory and some semi-precious stones*. The small amounts of lapis lazuli and amber apparent during the Iron Age II are most probably to be attributed to secondary use of existing products or to indirect trade, although amber could have originated from relatively accessible sources such as Lebanon. *The transition between the predominant use of gold during the Late Bronze Age to silver during the Iron Age I and II is a measure of changing economic forces, patterns and access to supplies*. This trend reflected distinct economic and socio-political changes that affected the entire Near East and the eastern Mediterranean during the transition from the Late Bronze Age to the Iron Age II.

During the Late Bronze Age, gold found in the southern Levant probably originated in Egypt. The presence of gold drastically decreased during the Iron Age I and was in very limited use during the Iron Age II. With the decline in Egyptian gold production and trade contacts with the southern Levant during the Egyptian Third Intermediate Period, silver became predominant among the precious metals beginning in the Iron Age I and primarily during the Iron Age II. This was also a result of increased trade contacts with silver-producing regions, probably by the Phoenicians acting as the commercial agents of the Neo-Assyrians, whose growing empire needed a standardized medium of exchange. The primary sources of the silver (sections 2.1.1.1., 2.6.2.) appearing in the southern Levant during the Iron Age II were Greece, Anatolia and Sardinia (the last exploited only towards the end of the Iron Age I), with lesser amounts from Spain and possibly Iran. The predominance of silver continued into the Persian Period, as is evident in the silver jewelry assemblages from Tel Michal and Kamid el-Loz.

The eastern deserts of Egypt along with the Sinai and the Negev regions were probably among the major sources for many of the semi-precious stones used in jewelry manufacture during the Iron Age II (section 2.2.). The decline in Egyptian trade contacts at the end of the Iron Age I and into the Iron Age II, along with technological advances in the working of siliceous materials, provided an added impetus for increased local production of glass and faience jewelry.

The fact that some materials were imitated using cheaper products reflects the socio-economic realities influencing the jeweler's craft (section 2.6.1.). The local Iron Age II jewelry was affected by a certain measure of standardization and increased trade in relation to the Iron Age I. For example, carnelian stone became predominant among the precious stones, as is evident in the manufacture of beads and pendants, while the role of glass and especially faience, cheaper substitutes for semi-precious stones, grew in importance. A limited statistical comparison of the Iron Age I and the late Iron Age II bead assemblages of Tel Ashdod and Tel Miqne-Ekron showed that after the 8^{th} century, mass production of siliceous beads favored faience, which was cheaper and less labor-intensive to produce than glass. The colors of stones other than carnelian were duplicated in faience and glass, while carnelian's red color was usually not imitated.

Ivory was imported from Asian, or more likely African sources. Most of the shells used as jewelry originated from the Red Sea.

5.3.3. Significance of Materials

Large rings worn around the wrists, ankles and upper arms were invariably made of durable metal such as a copper alloy, while earrings and beads that were worn primarily around the face and neck were made of a wide variety of materials as they were more visible in frontal presentation. *This shows that the choice of materials used in jewelry fabrication was also a reflection of their function* (section 2.6.3.). *In addition, the materials used in jewelry fabrication in themselves held symbolic significance for those who wore them*. However, while Egyptian literary sources provide much information about the inherent symbolism and significance of different forms and materials, textual information regarding such beliefs in the local Iron Age II is lacking. It may be inferred that the significance of materials during the Iron Age II in the southern Levant was also connected with religious/cultic symbolism, although this is largely unknown.

The materials used in jewelry manufacture were valued not only for their scarcity, but primarily for their intrinsic properties, chief among them color. For example, the predominance of carnelian among the semi-precious stones was not due to its relative availability in comparison with agate, for example, but more probably because its reddish color was laden with potent symbolic meaning. In some cases, the natural form of the object was associated with symbolic and protective powers, such as cowrie shells (Type III.4 Shell Pendants; see Fig. 26: 2–3), which resemble the female genitalia. Their recurring representation in female figurines and burials suggests their association with fertility. In addition, due to their similarity to the squinting human eye, they may have been employed as protection against the malevolent effects of the ‘evil eye’.

5.3.4. Workshops and Craftsmen

Identification of jewelry workshops is also integral to the understanding of the jeweler’s craft (section 2.7.). Though definite evidence of an Iron Age II jeweler’s workshop has yet to be found in the southern Levant, this is not due to their absence but simply to our own inability at present to identify them in the archaeological record (section 2.6.4.1.). Local craftsmen during the Iron Age II certainly had the technological knowledge, ability and expertise to manufacture the jewelry found in the southern Levant. Local workshops producing faience, glass and Egyptian Blue of local material, for example, appear to have already existed during the Late Bronze Age and Iron Age I, though imported raw material also appears to have been worked at the same time. *With the availability of imported or locally processed raw materials, along with the know-how of local jewelers accumulated over the centuries, there is no reason to assume that the existing corpus of Iron Age II jewelry was not locally produced*.

Repeated examples of complex jewelry pieces found at one or several sites within the southern Levant during a limited period may also provide indirect evidence for the existence of local workshops in the Iron Age II. Though such objects are seldom replicated *exactly*, they do reveal very distinctive forms and production techniques that indicate a specific manufacturing tradition. Examples may be seen, for example, in Type II.9 Earrings with ‘Tassel’ Attachments typical of the Iron Age I–II transition (Fig. 11: 27–34), which have been found at Tell el-Farʿah (S), Ashkelon, the Baqʿah Valley and Wadi el-Makkuk, as well as Wadi Fidan, Tawilan and Madaba in Jordan. Another example is Type II.1a Earrings with Hollow Drop-Shaped Attachments typical of the late Iron Age and the Persian period (Fig. 9: 1–17), which have been found at numerous sites, such as Jerusalem, Tel Miqne-Ekron and Lachish, in addition to Kamid el-Loz in Lebanon and Amman in Jordan.

Egyptian New Kingdom pictorial and textual sources and Neo-Assyrian textual sources provide evidence that jewelry making was a specialized profession (section 2.6.4.2.). Jewelers are described as gold-, silver- and coppersmiths, gilders, workers of semi-precious stones, bead makers, stone borers, carvers and engravers, workers in glass and faience. These sources also indicate that such craftsmen were often directly employed by the ruling elite.

5.4. Cultural Traits

Technological and stylistic characteristics of jewelry reflect the impact, adoption and assimilation of cultural traits (Chapter 3). Such traits could have arrived by way of trade, gift exchange, conquest or tribute, or transmitted by immigrant, itinerant or hired-out craftsmen.

5.4.1. Techniques

An 'international style' was created during the Iron Age II through accelerated Phoenician trade and colonization throughout the Mediterranean, which brought about the transmission of knowledge and technology. The dispersal of Near Eastern iconography and techniques often blurred indigenous artistic styles (section 3.1.). By this time, many fabrication techniques such as granulation had become widely dissipated throughout the Near East and the Eastern Mediterranean, so that techniques peculiar to a specific region or culture are difficult to discern. In addition, most jewelry items are relatively simple forms found over a wide area and time-span that do not always enable identification of any particular cultural characteristics. With the existing technology, many types may also have been 're-invented' at various times and places, and it is only in the more specialized, unique or distinctive pieces that the influence of a specific culture or geographic region can be inferred.

On the other hand, during the Iron Age II various cultural and political entities still continued to display their own distinct characteristics in jewelry. For example, Egyptian jewelry is readily identified by its own specific iconography and techniques such as *cloisonné*, which were largely missing in the repertoire of the local jeweler, though they were commonly used to decorate other kinds of local luxury goods such as ivory panels. At the same time, granulation is largely missing from the Egyptian repertoire of decorative techniques, but was in common use locally as well as much further west, such as by the Etruscans.

5.4.2. Foreign Cultural Traits

Foreign cultural traits in the material culture of the southern Levant during the Iron Age II are varied (section 3.2.), however, *the local jewelry repertoire exhibits little or no direct influences* arising from incoming trade, and the impact of neighboring cultures appears to have been indirect or minimal (section 3.4.). The much-discussed orientalizing period in the Greek world during the Iron Age II was not reciprocated in the southern Levant, thus the cultural traits of local jewelry appear to have moved in one direction – outwards, probably a result of Phoenician trade and colonization.

5.4.2.1. Egyptian

The impact of Egyptian artistic, iconographic and cultic traditions during the later portion of the Late Bronze Age and the beginning of the Iron Age I began to gradually fade during the Iron Age I and Iron Age II with the waning of Egyptian control. Egyptian characteristics in Iron Age II jewelry, as seen in some of the finger-rings and pendants for example,[139] were largely indirect. *Whatever 'Egyptian-style' jewelry found in the southern Levant at this time, though of Egyptian inspiration, was rarely of actual Egyptian manufacture*. Egyptian cultural hegemony had become well-entrenched in Canaan during the Late Bronze Age II, so many Egyptianizing elements, such as Egyptian-style amulets and various iconographic symbols such as lotuses,[140] were an integral part of the local culture during the Iron Age II, when they were widely used and diffused by the Phoenicians. However, *many jewelry items of Egyptian inspiration that were common during the Late Bronze period, faded out by the Iron Age II.* Examples include various kinds of earrings and earplugs (e.g., Earring Types V–VI; Fig. 14: 1–5) and some finger-rings, primarily those with cartouche-shaped bezels or otherwise decorated by hieroglyphs (e.g., Small Ring Types III.1, III.3a–d). *These either disappeared altogether by the Iron Age II or occurred only sporadically* (e.g., Type II.4 Stone Lotus Bud Pendant; Fig. 23: 13–17). Furthermore, no new forms or concepts of Egyptian inspiration that were not already existent in the Late Bronze Age or Iron Age I appear during the Iron Age II. This suggests that *there was little or no direct Egyptian impact on the jewelry of the southern Levant during the Iron Age II. Thus, any 'Egyptianizing' or 'Egyptian-inspired' items associated with this period were due to previous assimilation, or their use and propagation by the Phoenicians during the Iron Age II.*

5.4.2.2. Neo-Assyrian

The diffusion of the granulation technique and glass technology during the Late Bronze Age indicates contacts with the east, such as the regions of Assyria and Mesopotamia.

With the rise and expansion of the Neo-Assyrian empire during the Iron Age II, military conquests and the deportation of craftsmen eastward into the Neo-Assyrian realm brought the Assyrians into direct contact with Syro-Phoenician jewelry fashions, which appear to have been quickly adopted and then, as noted above, occasionally introduced to the southern Levant as products of Neo-Assyrian form (section 3.2.2.).

[139] These include Type III.4 and III.6a Small Finger-Rings (Fig. 15: 16-17, 22-28) and Type II.4 Stone Pendants (Fig. 23: 13-17).
[140] See for example Type III.1 Earrings (Fig. 12: 1) and Type III.11 Siliceous Beads (Fig. 31: 40-41).

The cultic scene depicted on the ‘Ishtar pendant’ from Tel Miqne-Ekron (Type I.2a Metal Pendant, Fig. 12: 7) is clearly the product of a local artisan familiar with Neo-Assyrian cultic conventions, indicating a certain influence of Neo-Assyrian iconography directly affecting local products. *The Phoenicians, acting as the commercial agents of the Neo-Assyrian Empire, probably were also responsible for the diffusion of south Levantine cultural traits throughout the Neo-Assyrian realm*. This situation and the phenomenon of Phoenician colonization in the west, greatly magnified the impact of Phoenician material culture throughout the Near East and the Mediterranean.

5.4.2.3. Greek

Despite the reinstatement of trade contacts with Greece during the latter half of the Iron Age II, *there were no clear jewelry imports from mainland Greece or the Aegean to the southern Levant during the Iron Age II*. However, in the other direction*, the 9th century finds from the Tekke tomb in Crete are an example of a Near Eastern influence, whether direct or indirect, on the jewelry of Crete during the Iron Age II*, demonstrating that south Levantine influence was clearly felt in the ‘orientalizing’ of art during the Greek Archaic period. In addition, some earrings from Tomb 5 of the 9th century at Lefkandi in Greece, find parallels in a hoard of gold jewelry from Tawilan in Jordan of the same period.

While a limited amount of Aegean or Aegean-inspired jewelry pieces were found in an Iron Age I context at Tel Miqne-Ekron, these may possibly be assigned to the coming of the Sea Peoples. These include a Type II.2 Double-Stranded Spiral Ring (only one example found in the Iron Age I) and numerous examples of Type VI.4 Beads of Ground-Down Conus Shells (Fig. 35: 7). Both types have been found only at Tel Miqne-Ekron (see Part II, sect. 7.5.6.).

5.4.3. Local Cultural Traits

Among the local cultures of the Iron Age II, only the Phoenicians and the kingdoms of Israel and Judah are of relevance to the present research (see section 3.3.). No clear cultural attributes of the Philistines were identified among the jewelry of the Iron Age II.

5.4.3.1. Phoenician

Among other objects, jewelry played a role in the propagation of Phoenician iconography. *The Phoenician element in the Iron Age II jewelry of the southern Levant is apparent in many of the earrings, small rings, pendants and beads*. The geographical and chronological data assembled in the typology of Part II enables certain types of jewelry, such as Basket Earring Pendants (Type III.2 Earrings; Fig. 12: 2–8), to be regarded as Phoenician ‘cultural markers’. The distinctive form, chronological span and distribution of these earrings are clearly associated with Phoenician trade and colonization throughout the Mediterranean basin. This should not be taken to only mean that Phoenician jewelry itself was exported outside of Phoenicia, but rather that the Phoenician craftsmen probably dispersed Phoenician motifs and techniques wherever they settled or traded. Examples of Phoenician jewelry have been found at Phoenician coastal sites such as Akhziv and ʿAtlit, yet also at inland sites such as Tel Miqne-Ekron that were directly influenced by Phoenicians during the later portion of the Iron Age II.[141]

5.4.3.2. Israelite/Judahite

Both Israel and Judah are generally lacking in distinctive jewelry. Most of the jewelry found at both Israelite and Judahite sites of the Iron Age II is composed of simple forms common throughout the region and in the Late Bronze Age–Iron Age I and Persian periods as well. *However, a few types such as club-, gavel- and plaque pendants*[142] *are distinctive, though not exclusive, to the region of ancient Israel and Judah during the early Iron Age II.* In keeping with the unsophisticated nature of ‘Israelite’ material culture, these types were of simple manufacture and usually made of bone, one of the cheapest and most readily available materials. Such types are missing from Late Bronze Age contexts and begin to appear at the very end of the Iron Age I, becoming common in the Iron Age IIa and then decreasing during the remainder of the Iron Age II. The fact that they are usually not found in the region of the northern Israelite kingdom after the 8th century supports the attribution of these jewelry forms to the Israelites/Judahites.

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141 See Earring Types II.3, II.7, III.1, III.2, III.4, IV (Figs. 10: 15-16, 14: 19-20, 15: 1-8, 16: 5-9), Small Ring Types III.4, III.7a (Figs. 15: 17-18, 19: 4-5), Pendant Types I.1a-b, I.12, I.14, IV.2 (Figs. 22: 1-6, 30-32, 34-36, 19: 3-5) and Bead Types I.3, III.17 (Figs. 28: 7, 25: 1).

142 Pendant Types III.1, III.2 and III.5 (Figs. 16-17, 18: 4-10); see Part II, sect. 7.4.3.

5.5. Significance

The significance of jewelry is revealed in the social, religious and economic spheres of daily life (Chapter 4).

5.5.1. Social Significance

Within its social context, jewelry functioned as a means of self-expression and gender determination (section 4.1.1.), an expression of wealth and social status (section 4.1.2.), a sign of rank or office (section 4.1.3.) and a cultural or ethnic marker (section 4.1.4.). *Throughout the Near East and the eastern Mediterranean in the Iron Age II, gendered burials as well as iconographic depictions show that men, women and children all wore jewelry,*[143] *yet only a very few jewelry forms can be gender-associated (*section 4.1.1.). Multiple anklets and bracelets may be associated with women as they are depicted on female figurines and found in female burials. They were probably also worn for their tinkling noise that would have accentuated dance. Males usually wore single anklets and bracelets, indicating a certain *gendered asymmetry*. Other types of jewelry such as cowrie shells, ubiquitous throughout many periods and sites, and crescent pendants,[144] common primarily during the Late Bronze Age and Iron Age I, but also continuing into the Iron Age II, may have been connected with fertility. Armlets were apparently worn by males as they embodied power and were also a sign of rank and status, as were signet rings (Type III.6 Small Rings).

The *wearing and giving of jewelry was regarded as a sign of wealth and status* (section 4.1.2.), not only in life, when jewelry was also worn as an honorific symbol conferring rank and prestige, but also in burial rites, where the same messages were conveyed as conspicuous waste. While shell, bone and clay were readily available to all and were considered materials of low status, precious stones, glass, faience, Egyptian blue and especially precious metals were accorded higher status and worth. This demonstrates that wealth and status were also expressed by the materials from which the jewelry was made. The fact that many burials produced only single isolated beads, and that these were also among the most common types of jewelry dedicated to temples, reveals that *even the smallest and most inconspicuous jewelry items were accorded value and may be seen as expressions of wealth.*

Iconographic representations offer a glimpse of specific ethnic or cultural fashions in which jewelry items played a role, especially when depicting foreigners (section 4.1.4.). For example, while Egyptians did not wear solid metal anklets or rounded star pendants, Syrian/Canaanites wear them in Egyptian depictions as well as in figurines of local manufacture throughout the Late Bronze and Iron Ages.

5.5.2. Religious Significance

The form, color and material of jewelry may bear cultic or religious significance (section 4.2.1.) *and one of the most prominent religious aspects of jewelry was its amuletic function by which its magical properties protected the wearer from harm* (section 4.2.2.). For example, Crescent Pendants (Type I.4a–b Metal Pendants, Fig. 22: 11–25) were an iconographic representation of the moon god that conferred apotropaic powers. Similarly, the schematic depictions of ‘eyes’ on beads (Siliceous Bead type III.12, Part II, sect. 7.5.3.; Fig. 24: 1–14) may have been believed to ward off the harmful effects of the ‘evil eye’. The predominant use of carnelian stone probably reflected the cultic significance of the color red with its analogy to blood and life. The radiance and malleability of materials such as gold and silver may have been held in esteem, being linked to the sun and moon.

5.5.3. Economic Significance

As items of personal wealth, religious and cultic value, jewelry had an economic significance in everyday life and was used as payment in various types of transactions (section 4.3.). As such, *jewelry also functioned as a form of currency, either appraised for its intrinsic qualities as a complete piece or valued as bullion by the weight of its material against a set standard, when it ceased to function as jewelry*. The numerous hoards of silver, many of which also contained whole or broken-down jewelry such as those from Eshtemoʿa and Tel Miqne-Ekron (section 2.6.2.), attest to the use of this metal as a form of bullion during the Iron Age II. Various types of whole or broken-down jewelry, whether due to their material, color, symbolic significance or even craftsmanship, may have been bartered, though their value remains unknown. The fact that jewelry was dedicated to temples or shrines, such as that found in the favissae of the Fosse Temple at Lachish or the jewelry hoards from the excavations at Tel Beth-Shean, is also a measure of its economic worth.

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[143] See Chapter 1.3, Part II, sect. 7.1.9, 7.2.6., 7.3.4., 7.4.7., 7.5.8.
[144] Metal and Shell Pendant Types I.4a-b, III.4 (Figs. 22: 11-25, 18: 2-3).

In conclusion, this study has sought to show that research into ancient jewelry holds tremendous potential for archaeological research. Though the focus of the present study is the Iron Age II of the southern Levant, both its content and conclusions are often relevant for other lands and periods. The Iron Age II jewelry of the southern Levant was part of an extended continuum that was affected by local and foreign traditions, changing socio-economic and political forces, as well as technological and stylistic developments. It is hoped that this study will be used as a platform for further investigations of ancient jewelry.

Part II
Typology

Chapter 6
Typological Schemes for Jewelry Classification

The second part of this book contains a full and detailed exposition of the various types of jewelry found during the Iron Age II in the southern Levant. However, as many of the same forms and materials also occur in earlier and later periods, as well as in other lands, the data found in this study is partially representative of other periods and regions as well. As a result, many of the specific items appearing in Figures 8-35 do not necessarily originate from the Iron Age II, although they are always representative exemplars of forms appearing during this period. The study is based on published material as well as unpublished items to which the author has had access, and presents the most up-to-date collection of Iron Age II jewelry from the southern Levant.

While constituting the bulk of the raw data and research upon which this entire study is based, the data presented here is also meant to be used as a handy textbook to compare, classify, date and understand the jewelry of this period — which has already been found or will be found. In addition, the classification of a broad spectrum of jewelry objects from the Iron Age II in the southern Levant into a master typology coupled with a detailed discussion is a useful tool for future research.

Classification schemes are designed to create a mutual base for the transfer of information. For ancient artifacts such as jewelry, the purpose of a classification system, or typology, is to organize large quantities of diverse objects into a coherent scheme to facilitate their study and understanding.

The organization of such an extensive and varied body of objects such as jewelry into a user-friendly typological scheme poses many challenges, and no single approach is entirely satisfactory. Most typological schemes are based on form, such as those created for ceramic analyses. However, as jewelry objects performed an assortment of functions, were worn in various manners on different parts of the body and were made of a variety of materials, a purely formative approach to classification appears too rigid. Any meaningful classification system should be based on a range of criteria.

One of the pitfalls in the creation of a typology for ancient artifacts is the tendency towards subjective interpretation. The nomenclature applied to the specific categories often implies function, but our interpretation of function is invariably subjective. For objects of ancient jewelry, the manner in which they were used in the past is not necessarily the manner in which we may interpret their use. For example, a Type II.6a Earring with Attachment of Solid Granule Cluster (e.g., Fig. 11: 1-9) was found *in situ* as a nose-ring in a Late Bronze Age burial at Megiddo (Loud 1948: pl. 225: 9, T. 2121). While such an object could certainly have functioned as an earring, its additional function as a nose-ring is so far evident only from the archaeological context in which one such example was found. Thus, beyond generalized pictorial and iconographic depictions and the very limited evidence from funerary contexts, there is extremely little evidence of how specific jewelry types were actually used in the Iron Age II in the southern Levant.

Another problem in creating a classification of ancient jewelry is its organizational structure – how to associate the wide variety of forms, materials and functions. For example, if a classification system is based solely on the form of the objects, its context and purpose become meaningless and the choice of material irrelevant. An organizational scheme based solely on such technological criteria as materials and manufacturing methods would be oblivious to the presumed function of the object. Furthermore, if the system is based exclusively on function or purpose, the classification is prone to subjectivity and in addition, cannot take into account shifting patterns of material exploitation and changes in the manner an object was used and manufactured. The solution must be found in an integrated scheme that attempts to take into account all these factors.

Numerous attempts have been undertaken to create typologies for ancient jewelry.[145] One of the first such typologies was created by Beck (1928), who recognized the need for a comprehensive classification scheme and nomenclature of beads and pendants. Though his work was based on examples from different periods and regions, form was the only consideration. The use of a specific material often dictates the form, e.g., what can be achieved in metal may not be possible in stone. Thus, beads and pendants of certain materials, by their nature, lend themselves to certain forms. For these reasons, Beck's system includes a very large amount of types that may share a generalized form and purpose, but are actually unrelated, as their material and method of construction are very different. Despite these shortcomings, Beck's system is still a very handy tool for nomenclature and classification of beads and pendants.

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[145] In comment on the subject of bead classification Macalister (1912b: 104) noted: "…of all personal ornaments…by far the commonest and most varied are the beads, found in profusion…so extensive is the variety of size, shape, colour and material that it is difficult to suppress a feeling of despair at … any attempt to classify them".

Other typological schemes have attempted to trace the development of jewelry over time within the context of a defined geographical region or broad cultural entity. Higgins's work on Greek and Roman jewelry (1961) begins with a discussion on materials and techniques and then continues with a periodic review of jewelry from the Greek prehistoric to Roman periods. This work was the first to try to classify jewelry according to a simple logic of their function. Higgins's system is based on a division into several general types, but the scope of his work is too wide to be of specific use for any one region or period and only manages to deal with the more prominent and attractive examples of the jeweler's craft. Other authors who carried out regional studies of jewelry from many periods adopted a similar approach and were thus limited in a similar manner. Wilkinson's (1971) pioneering work on ancient Egyptian jewelry opens with a very general discussion on Egyptian craftsmen, materials and techniques and then reviews the jewelry by periods (e.g., Old, Middle, New Kingdoms, etc.) including a very general discussion of functional groups such as finger-rings, girdles, pectorals, etc. Though this book is one of the first to deal with ancient Egyptian jewelry in a comprehensive manner,[146] the treatment of the subject is too broad in scope to go into any detail as to the range of jewelry types from any one period. Andrews's (1990) book on ancient Egyptian jewelry deals only with the development of generalized functional types. These are arranged by the manner in which they were worn (e.g., diadems, collars, bracelets, rings, amulets, etc.), of which numerous magnificent examples are found in tombs and artistic depictions. However, there is no periodic classification and no attempt to define morphological variants or discuss their development. In Maxwell-Hyslop's study of Western Asiatic jewelry (1971), each chapter focuses on a specific region and covers a very broad period of time. In her treatment of the local jewelry from Syria-Palestine, no typological framework is used, and the author only discusses some of the more prominent examples from selected sites. Concerning the jewelry of the southern Levant from the 12th–6th centuries, she writes "The period covered in this chapter … deserves a full-scale study based on a detailed index of all the stratified gold and silver jewelry and the numerous pieces found in tombs. Studies of the associations of the jewelry and the distribution of the different types, together with detailed technical studies, all need to be undertaken. Here we can only draw attention to some of the problems which await solution and discuss some of the more important types based on those pieces of jewellery from selected sites that were available for study" (1972: 224).

Other regional studies, such as that of Branigan (1974), have dealt with metal jewelry within the context of metal objects in general, classifying Early and Middle Bronze Age Aegean metal jewelry into broad categories and sub-groups. However, this study is limited to metal jewelry, which is only one of the various categories of jewelry. Effinger's (1996) detailed work on Minoan jewelry is much more inclusive, based on a typological division into general functional forms, further subdivided into specific morphological sub-types. However, this work does not distinguish between different types of materials within a functional category or sub-category. In his study of Aegean Bronze Age jewelry from burials, Konstantinidi (2001) employs a system similar to that of Andrews (1990) and classifies the jewelry according to the body part or apparel upon which it was supposedly worn (neck-ornaments, hair/head ornaments, clothing ornaments, arm/hand ornaments). His typology further divides into sub-types, but no differentiation is made as to material. A different classification scheme for Aegean precious-metal jewelry was proposed by de Pierpont (1990), who tries an objective, non-interpretive approach beginning with how an object was fastened. As many objects that appear very different from one another may have a similar method of fastening, a further division is needed by general form, defined without regard to alleged function. Though this is a commendable attempt at a purely objective definition and classification, the result is a cumbersome, confusing and at times illogical scheme.

Madhloom's (1970) classification of Neo-Assyrian earrings divides them into four primary types, based on form. This work is based primarily on the numerous depictions of earrings found in Neo-Assyrian reliefs, providing a rare and important insight into exactly how such jewelry was worn and by whom.

As for the southern Levant in particular, in his classification of beads and pendants from Tell el-Farʿah (S), Starkey (1930; later updated (Starkey and Harding 1932: pl. 72) followed the same general method as Beck (1928). His commendably exhaustive work is based on the finds from one site only, and while noting the materials used for each form, he fails to make any connection between material and form, nor is there any reference to typological development within the context of a multi-stratified site. Starkey divides the beads and pendants (primarily from the tombs) at Tell el-Farʿah (S) into 24 categories according to general form, then presents all the various exemplars of that category occurring in a wide variety of materials, each example accompanied by the tomb number to which it was associated and occasionally its supposed date.[147]

Kertesz's work on the beads and pendants from the Late Bronze Age mining temple at Timna (Kertesz 1972; 1988) uses Beck's system as a basis for classification and further subdivides the objects by material. Kertesz (1972) has also produced a very impressive and specific analysis of the techniques employed in the manufacture of the

[146] For an earlier and detailed treatment of the subject see Williams 1924.

[147] Starkey's dating refers to the Egyptian dynasty to which the various types of finds were deemed to be associated. While using Starkey's broad dating in this study (translating Egyptian dynastic numbers into centuries), objects of no association are disregarded.

Timna beads, a subject not often addressed in great detail by most jewelry studies. This is one of the first studies to make a connection between the form and the material, although it is based on the finds from a single site. In their thorough study of the beads from Tel Beth-Shean, James and McGovern (1993: 135-144) employ Beck's typological classification system and they also differentiate between the materials used in the manufacture of each type.

Most classification schemes for jewelry invariably begin with an *a priori* understanding of how the object was worn or employed. Platt's (1972) treatment of Palestinian Iron Age jewelry divides it into several broad categories (bangles, rings, earrings, bone pendants, etc.) and reviews the presence of each category within a listing of major sites. However, this work does not attempt an organized sub-definition or classification within each of these groups. Limmer (2007) differentiates between jewelry pieces such as earrings, bangles (large rings) and rings (small rings) and jewelry elements. The latter are objects that form part of a creation, such as beads, pendants, amulets, scarabs, scaraboids and seals. However, within each functional group, little or no distinction is made as to type.

In Herrmann's (1994) thorough treatment of amulets in the southern Levant, the function of these objects is already assumed; the classification is based on iconographic criteria by which they are divided first by the type of deity or object depicted, then by the specific attributes of the rendition. McGovern's earlier typology of Late Bronze Palestinian pendants (1985), divides the material into several general classes (e.g., Egyptian deities, human forms, fauna, flora, hieroglyphs and geometric forms), then making a further subdivision according to form.

Many publications of a single site with a large number of objects create their own typology. For ancient jewelry, some of the best examples of this are the typologies developed in the publication of the Phoenician jewelry from Tharros in Sardinia (Pisano 1987), and that in the study of the jewelry from Carthage (Quillard 1979; 1987), both of which divide the jewelry into general functional types and then into sub-types based on form. However, though these works and others are often quite detailed, providing an in-depth discussion and extensive *comparanda*, they are often tailored specifically to the site in question and thus their typologies are seldom used outside of that site itself.

While all of the typological schemes reviewed above have merit, they usually lack one or more of two major aspects:

1) A detailed and comprehensive classification of jewelry that takes into account not only the general (or functional) category but also presents a specific definition of the various types and sub-types. Such a system should not only define the range of forms within a region as compared to other regions, but must also assist in tracing the development of a certain form over time and be flexible enough to incorporate new forms as they are discovered.

2) A linkage between the type of object and the material and technique with which it was made. Within a chronological framework, such a connection could serve to show the shifting patterns of material use and technical fabrication, and may also throw light on socio-cultural and economic processes of change that may or may not be readily apparent in other components of the archaeological record.

6.1. Framework of the Typology

The typological framework of this study is a continuation of that constructed in the author's MA thesis that dealt with the jewelry of Tel Miqne-Ekron (Golani 1996a). This typology has since been employed in the publication of jewelry from other sites (Golani 1996b; 2004a; 2004b; forthcoming A-G; Golani and Ben-Shlomo 2005; Golani and Sass 1998), where types not included in the original typology have been added. This dynamic typological scheme is structured so that new types and sub-types can be easily added and is intended to serve as a basis upon which ancient jewelry may be classified and its typological development studied. The advantage of such a typology lies in the need for a standardized system of classification to accurately describe, compare and study items of ancient jewelry.

The typology is composed of a *four-stage* classification system.

1) In the *first stage*, the jewelry is divided into six major categories defined by the supposed *function* of the jewelry item: earrings, small rings, large rings, pendants, beads and varia.[148] Function is determined by the general form and size of the object. Though this system may be subjective, this subjectivity is recognized as an unavoidable step in order to classify and understand the meaning of these objects. Rings, which include ring-like objects of different sizes and purposes such as hair-rings, finger-rings, nose-rings, bracelets, anklets, etc., are divided into two major groups according to their size. A large ring, such as an anklet, for example, could not have functioned in the same way as a small ring, such as a finger-ring. However, some objects may have had several functions: a small

[148] The category of 'varia' includes a small number of objects that do not fit into the present typological scheme or whose mode of function is unclear.

open-ended ring could have been used as a nose-, ear-, hair- or finger-ring. In such cases, the object remains classified at its most general level (e.g., small ring).

2) The *second stage* is based on *form and/or method of manufacture* and varies according to the functional group presented above. Within the typology, it is apparent that the morphology of an object is often a reflection of the specific technology involved in its production. At this level, the different types are given Roman numerals, for example:

First stage – Earrings
Second stage – Type I – Solid Lunate
Type II – Solid Lunate with Fixed Attachment
Type III – Solid Lunate with Pendant
Type IV – Composite[149]

Pendants and beads are found in such a wide variety of forms and materials, that in this stage they are classified by their *material* (e.g., metal, stone, siliceous material, terracotta, bone/ivory and shell). The material from which an object was formed invariably determines the range of techniques that may be used in its manufacture.

First stage – Bead
Second stage – Type I – Metal
Type II – Stone
Type III – Siliceous Material (Faience, Egyptian Blue, Glass)
Type IV – Terracotta
Type V – Bone/Ivory
Type VI – Shell

In the case of pendants, however, many Egyptian-style pendant-amulets that depict gods, animals, plants or sacred symbols, though usually made of siliceous materials such as faience, were also occasionally made of other materials such as metal, stone or bone. In such cases, over-rigidity of the typological framework would have demanded an unnecessary description of the same amulet form under each material heading. As the majority of these amulets are made of faience, this has been overcome by presenting all these amulets under the category of ‘siliceous materials’, while noting when other types of materials have been used as well.

3) The *third and fourth stages* of classification are those of *specific attributes of form and decoration.* The third stage is represented by an Arabic numeral after the Roman numeral of the second stage, while the fourth stage is designated by a small-case letter:

First stage – Earrings
Second stage – Type I – Solid Lunate
Third stage – I.1 – Solid Lunate, Small Plain
Fourth stage – Type I.1a – Solid Lunate, Small Plain with Elongated Hoop

In summary, to classify a jewelry object by this system, it must first be assigned a major functional category, and then it may be further classified by form into a type of the general category, or in the case of beads and pendants, by material, which is inextricably tied to technique. In the final stages, the type is sorted by specific attributes of form and/or decoration into sub-types.

6.2. Implementation

While the typology constructed here is a tool for the classification and study of jewelry from the Iron Age II in the southern Levant, it may be employed for objects associated with other periods within the same region or even in a broader geographical context. Many of the finds included in this typology originate in various publications, and many more are unpublished and presented here for the first time. The information from these two sources was entered into a computerized database that includes data on the site, definition of the type and sub-type, bibliographical references, state of preservation, materials and technical aspects,[150] amount of items, provenance and date.

Within the database itself, the date of an object is based on that given in the publication. However, in some cases later studies have resulted in slight revisions of dates, such as the tombs excavated by Petrie at Tell el-Farʿah (S)

[149] Though Type IV Composite earrings are not common, they are classified as a separate typological category as they combine both the fixed attachment and the free-moving pendant in one piece.

[150] Identification of the specific material and the technical aspects of the manufacture were done on a sight-only basis. In many cases where only line drawings or photographs of the objects were available, the identification of the material and the technical aspects of manufacture follow those given in the publication. However, this should be taken with some caution, as it is often difficult to distinguish between faience and glass (e.g., many publications use the non-committal term ‘frit’), bone, ivory and shell (easily confused) and copper/bronze. In the later case, as only a metallurgical analysis can determine whether tin was actually an intended component in the alloy, all such items have therefore been identified as ‘copper alloy’.

that were re-examined by Laemmel (2003), the tombs from Pritchard's excavations at Tell es-Saʿidiyeh in Jordan that were re-examined by Green (2006), and the dating of Level I at Tel Lachish (Fantalkin and Tal 2004).[151] It should be noted that a detailed re-examination of problematic dates are far beyond the limits of this study.[152] As dates from excavations of the early 20th century are problematic, they are highlighted as the original date of the excavator wherever they are presented. Revised dates are added when possible and serve at times for dating comparable material.

The collation of all this data into an electronic database has enabled a convenient means of classification, sorting and study that has so far proven itself an effective tool for research.[153] The present work contains a full presentation of the typological scheme up to the completion of this study. The typology is constantly being updated and refined with further discoveries.

6.3. The Structure of the Discussion

The typological sequence is here presented in the order of the five main functional categories, within which is a further division into major types. The ensuing discussion follows the order of the sub-types within each group, each sub-type being discussed separately.

Within the framework of the typological discussion for each jewelry sub-type, only forms found in the Iron Age II are discussed, though many of these are often present in earlier and later periods as well. Jewelry types not found in the Iron Age II are not discussed, but the type and sub-type definition are noted in the full listing of the typological scheme found in the beginning of each section. For example, Type III.3 Earrings are included in the comprehensive typological scheme, but because they are associated with the Late Bronze Age–Iron Age I, and not the Iron Age II, they are not discussed in this work and are not depicted in the figures.

The typological discussion includes a brief description of each sub-type and its method of manufacture, along with observations concerning its chronological range, geographical distribution and cultural origins or traits. Local examples of each sub-type, where relevant, are noted in table form including information as to where they have been found, in what material they were fashioned, how many have been identified, their general provenance, date, bibliographical references and any relevant remarks. In the case of unpublished items, the registration of their present repository is noted. Exemplars of each type are presented in Figs. 8-35. Comparative parallels from regions outside the southern Levant that elucidate the geographical range, the cultural traits and the chronological time span are not presented in the tables, but are noted in the text.

Many types of jewelry that were very common throughout the Iron Age II had a wide chronological time span and a geographical distribution that extended well beyond the southern Levant. Though such types make up a large portion of the Iron Age II jewelry, their discussion remains on a general level and comparative parallels are not given, as they have no cultural or chronological significance. In addition, unique jewelry types of dubious or uncertain chronological range, which have little or no bearing on the typology, are noted in the typological tables, but omitted from the discussion.

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[151] In some cases, the chronological dating of jewelry types may indicate that a re-examination of established dates for specific tomb deposits or hoards is needed. See the discussion in Earring Type II.4 on the 5th century dating of the jewelry from the Jordanian hoard (7.1.2.), the discussion in Earring Type II.6b as relating to the dating of Tomb 14 at Tel ʿIra (see below n. 164), the discussion in Earring Type II.8a (and see below n. 169), on the re-dating of a small jewelry hoard from Tell Jemmeh from the 12th to the 10th century (see n. 93 and n. 169), the discussion in Chapter 1, n. 14 concerning the 10th century dating of the Eshtemoʿa hoard (contra Kletter and Brand 1998 who propose an 8th century date) and the discussion in Earring Type III.2a (see n. 181) concerning the restriction of the Meqabelein tomb date from the 13th-11th centuries to the 11th century.

[152] For example, the dates from Macalister's excavations at Gezer (1912b; 1912c) and MacKenzie's (1912-1913) excavations at Tel Beth-Shemesh. The dates published by Dayagi-Mendels (2002) for the Akhziv tombs excavated by E. Ben-Dor usually indicate a broad chronological range (determined by Dayagi-Mendels), as little or no stratigraphic differentiation was undertaken within each of the tombs by the original excavator.

[153] One of the major deliberations in the formulation of any classification scheme involves to what degree items should be differentiated from one another, i.e., at what point is an object defined as a different type or sub-type. Over-differentiation leads to an excruciating splitting of hairs over every nuance that does not enable comprehension of the whole nor a meaningful understanding of the specific. Under-differentiation, or too much inclusiveness, inevitably leads to the same pitfalls, so the best solution would appear to lie somewhere in between. The guidelines for this are inevitably subjective and necessarily flexible, though a basic reliance on common sense born of experience and practicality appears to be the best course of action.

Chapter 7
The Typology of Iron Age II Jewelry in the Southern Levant

7.1. Earrings

Earrings are usually made of metal though other materials, such as faience or stone, are also occasionally used. Earrings may be broadly defined as ornaments that hang from a hole pierced in the ear lobe. Thus, the main identifying characteristic that defines an earring as such is its means of attachment to the ear. A wire hoop inserted through the pierced lobe of the ear and then bent downwards, meeting the other end below the lobe, provides the means of attachment. Earring hoops are generally circular to oval and at their base, a thickening, an attachment or a small suspension ring indicates their function as an earring. Such objects could also have functioned as nose rings, in addition to earrings and they may be attached to articles of clothing. Some of the small open-ended rings (see below Part II, sect. 7.2.1.) may have also functioned as earrings (see Maxwell-Hyslop 1971: 114), but their use as finger-, hair- or even nose-rings cannot be ruled out. These are therefore included in the group of small rings. Other forms of attachment to the ear are earplugs, which essentially fill in a large hole cut in the ear lobe.

Earrings are here classified into seven basic types, differentiated primarily by form and secondarily by method of manufacture and decoration. The basic and most common form of earring is that of the Solid Lunate (Type I; Fig. 8) that has several variations: Solid Lunate with Fixed Attachment (Type II; Figs. 10-12), Solid Lunate with Pendant (Type III; Figs. 13; 14: 5-6) and Composite (Type IV; Fig. 13: 7-9). Types I-III are the most common, each including several sub-types. Other types include Annular Earrings with Truncated Ends (Type V, of the Late Bronze and Iron Age I), Earplugs (Type VI; Fig. 14: 1-5) and Hollow Lunate Earrings (Type VII; Fig. 14: 6-17). Each of these general types includes variations (sub-types) of size, form and decoration.

Occasionally, various types of small beads are strung through the earring hoop. These can be of metal, such as iron beads upon an earring hoop from Lachish (Tufnell 1953: pl. 54: 9), silver granule beads on an earring from Tawilan (Fig. 11: 18; Ogden 1995: figs 8.4, 8.17), of precious stone as found at Tel Miqne-Ekron (Fig. 10: 14), of siliceous materials, such as in glass at Akhziv (Fig. 8: 6; Dayagi-Mendels 2002: fig. 4.21: 46; 4.1: 3) or of shell, also from Akhziv (Mazar 2004: fig. 24: 22-24).

As they are outstanding articles of adornment that occur in a variety of forms, materials and manufacturing techniques, earrings are one of the more prominent types of jewelry exhibiting typological development throughout the Bronze and Iron Ages. Though the form of the earring may show a great deal of variation, early forms of the Early and Middle Bronze Ages were no more than simple, undecorated open-ended annular rings (Type I.1 Small Ring, see below Part II, sect. 7.2.1.; Fig. 15: 1-3). Only from the end of the Middle Bronze Age, with the advent of granulation, in addition to advanced forming, soldering, wire-making and decorative techniques, more sophisticated forms began to appear, especially during the latter portion of the Iron Age II and into the Persian period.

In the following section, the earrings are presented in typological order of the seven basic types, within which each of the sub-types found in the Iron Age II is discussed.

7.1.1. Earrings Type I – Solid Lunate

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
I.1	Small Plain	MB II onwards	Very common	Fig. 8: 2-6
I.1a	Small Plain with Elongated Hoop	Iron Age I – Persian	Common	Fig. 8: 7-10
I.1b	Small, Plain with Short or Long Hoop with Top Closure	MB II – Iron Age I	MB-LB, limited appearance in Iron Age I.	Fig. 8: 1
I.2a	Wide Plain with Short Hoop	Iron Age II	---	Fig. 8: 11-14
I.2b	Wide Annular	Iron Age I	Often decorated with row of incised dots.	---
I.3a	Small Plain with Short Hoop and Decorated	LB – Persian	Uncommon, decorated form of Type I.1. Earlier local techniques possibly influencing Neo-Assyrian forms?	Fig. 8: 15-20, 25
I.3b	Small Plain with Elongated Hoop and Decorated	Iron Age I – Persian	Uncommon, decorated form of Type I.1a.	Fig. 8: 21-24
I.4	Flattened – with Twisted and Straight Wire Decoration	LB	Uncommon	---

I.5	with Twisted Square-Section Wire	MB – LB	Common, annular form	---
I.6a	Multiple-Lobed ‘Sling’	LB II – Persian	Long lifespan. Northern origin, locally appearing in LB.	Fig. 8: 26-31
I.6b	Sling – Flattened Lunate with Granule decoration	Late Iron Age II – Persian	Uncommon	Fig. 8: 32
I.7	with Elongated Hoop and Sculpted Crescent	Iron Age II	Rare	Fig. 8: 33

Earrings Type I.1 – Small Plain (Fig. 8: 1-6)

Earrings with a solid crescentic body and a tapered, bent-over hoop, the ends usually meeting at one side. Also described in the literature as boat-, leech-, lunate- or crescent- shaped, these earrings occur in a wide range of sizes. The hoop is generally short and thinner than the body which is usually wider and thicker. Most commonly found made of copper alloy, this type is also found in gold, silver and electrum while gold or silver foil may also occur over a copper alloy core, a technique known as ‘gilding’. Some gold examples have a reddish tinge, indicating the addition of copper, or appear pale in color, indicating the addition of silver to produce electrum. Such earrings may be manufactured by casting or also by hammering a thick wire into shape, then rolling the ends of a thick wire between two flat surfaces in order to taper the ends. Subsequently, the wire could be bent into the desired shape.

This form is very common throughout the ancient world. It is first attested in Sumer in the middle of the 3^{rd} millennium (Woolley 1934: 241, pl. 138), from where it spread westwards throughout the Levant, being locally introduced during the Middle Bronze Age, as for example at Tell el-ʿAjjul (Petrie 1934: pl. 18: 85) and in Assyria at the same time (Maxwell-Hyslop 1971: 240), passing out of fashion by the Hellenistic period (Kraay and Moorey 1968: 196; see Gjerstad 1948: 385; Castro 2008 for a broad survey of the development of this earring type). In Egypt, this earring style becomes fashionable during the New Kingdom and may have been an Asiatic form imported into Egypt (Aldred 1971: 198), though its appearance there is rare. While the ends of the hoop in Type I.1 meet at the side, in earlier forms of the Middle Bronze – Late Bronze Ages and Iron Age I period (Type I.1b) the ends are often found to meet at the top.

Earrings Type I.1a – Small Plain with Elongated Hoop (Fig. 8: 7-10)

A variant of the Type I.1 earring described above, this form features an elongated hoop that also closes at the side. This basic form (see below, Type I.3b; Fig. 8: 21-24) first appears at the end of the Iron Age I and continues to the end of the Iron Age II and into the Persian period, when decorated earring hoops, especially of ornate attachment earrings (see below Type II.1), become popular.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Yama	Silver	1	Cave 1 burial repository	5^{th}-4^{th} c.	Gal and Muqari 2002: fig. 9: 9	From a single-period burial.
Tell Jemmeh	Copper alloy	1	Unclear	6^{th}-4^{th} c.?	Golani forthcoming E	---
En Gedi, Morinaga Cave	Copper alloy?	2	Burial cave	6^{th}-4^{th} c.	Shai, Porath and Eshel 2007: fig. 3: 6	---
Tel Michal	Silver	1	Strata XI-VI	6^{th}-4^{th} c.	Muhly and Muhly 1989: fig. 25.10: 198	---
Tel Michal	Copper alloy	11	Strata XI-VI	6^{th}-4^{th} c.	Muhly and Muhly 1989: fig. 25.10: 183-194	Partial.
Tel Michal	Copper alloy	2	Cist tomb 2001	6^{th}-4^{th} c.	Herzog and Levy 1999: fig. 2: 22-23	Fragmented. From a single-period burial.
Kamid el-Loz	Silver	2	Grave 28	6^{th}-4^{th} c.	Hachmann and Penner 1999: pl. 12: 2-3	From a single-period burial.
Kamid el-Loz	Copper alloy	7	Graves 1, 2a, 5	6^{th}-4^{th} c.	Hachmann and Penner 1999: pls. 12: 6-11, 13; 14: 1	From single-period burials.
Ashkelon	Silver	4	Cist tomb	6^{th}-5^{th} c.	Golani 1996b: fig. 4: 2	Two pairs found on either side of skull. From a single-period burial.
En-Gedi (Tel Goren)	Copper alloy	1	Stratum V	7^{th}-6^{th} c.	Mazar, Dothan and Dunayevski 1966: fig. 24: 3; pl. 23: 28	Partial.

Meqabelein	Copper alloy	2	Burial cave	7th-6th c.	Harding 1950: pl. 15: 2	From a single-period burial cave. Excavator's dating.
Tel ʿIra	Copper alloy	1	Tomb 13	7th c.	Freud 1999: fig. 8.1: 4	Hoop of attachment earring(?). From a single-period burial.
Lachish	Copper alloy	1	Burial cave 4005	10th-6th c.	Tufnell 1953 : pl. 57: 42	Mixed tomb. Excavator's dating.
Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR II	10th-7th c.	Dayagi-Mendels 2002: fig. 4.1: 2	Mixed tomb. Dating according to Dayagi-Mendels.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 223	10th-9th c.	Petrie 1930: pl. 42: 329	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell Jemmeh	Gold	1	From jewelry hoard	12th (probably 10th) c.	Petrie 1928: pl. 1: 3	With two cut marks on body. Excavator's dating. Author's suggestion-10th-8th c. See n. 93 and n. 169.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 133	11th-10th c.	Petrie 1930: pl. 39: 276	Partial. Dating according to Laemmel 2003: Table 1.
Tell Jemmeh	Silver	5	Unclear	11th-10th (?) c.	Petrie 1928: pl. 22: 40-42, 46-47	Excavator's dating.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 134	11th c.	Petrie 1930: pl. 29: 276	Dating according to Laemmel 2003: Table 1.
Megiddo	Silver	at least 6	Stratum VIA	12th-11th c.	Loud 1948: pl. 229: 7-9	From three hoards of silver jewelry scrap. Dating according to Mazar 2008.
Baqʿah Cave A4	Copper alloy	1	Cave A4	12th-11th c.	McGovern 1986: fig. 85: 21	---
Tell el-Farʿah (S)	Gold	1	Tomb 532	12th c.	Petrie 1930: pl. 22: 197, 36: upper left	From 'Philistine' tomb. Dating according to Laemmel 2003: Table 2.
Lachish	Copper alloy	1	Burial(?) cave 515	Unclear	Tufnell 1953: pl. 56: 20	Mixed tomb.
Tel Beth-Shemesh	Silver	2	Unclear	Unclear	Unpublished	UM reg. no. 61-14-449, 61-14-450
Tel Beth-Shemesh	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-1101

Earrings Type I.2a – Wide Plain (Fig. 8: 11-14)

A variation of the solid lunate form, this is a larger, heavier type, with a wide lunate and a more rounded general outline. The inner arc of the crescent often has a small rise in the center. This form appears throughout the Iron Age II and may be seen as indicative of the period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Copper alloy	1	Tomb no. 1, Phase 4	7th-6th c.	Mazar 2004: fig. 24: 25	---
Tel Miqne-Ekron	Copper alloy	1	Stratum I	7th-6th c.	Golani forthcoming A	From sealed context.
Tel Miqne-Ekron	Silver	5	Stratum IB	7th c.	Golani 1996a: 26; Golani and Sass 1998: fig. 10: 2	Four examples from sealed hoard.
Tel Miqne-Ekron	Copper alloy	1	Stratum IB	7th c.	Golani forthcoming A	---
Tel Beth-Shemesh	Copper alloy	3	Tomb 8 repository	8th–7th c.	Mackenzie 1912-1913: pl. 59: 7-9	Corroded. Excavator's dating.
Megiddo	Copper alloy?	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 86: 16	Excavator's dating.
Tell en-Naṣbeh	Copper alloy	1	Tomb 3	8th-7th c.	McCown 1947: pl. 112: 28	Excavator's dating.

Tell el-Farʿah (S)	Copper alloy	2	Tomb 201	10^{th}-8^{th} c.	Petrie 1930: pl. 41: 276, 279; Maxwell-Hyslop 1971: pl. 202	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Silver	1	Tomb 221	10^{th}-9^{th} c.	Petrie 1930: pl. 41: 296	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 224	10^{th}-9^{th} c.	Petrie 1930: pl. 42: 340	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 226	10^{th}-9^{th} c.	Petrie 1930: pl. 42: 321	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Silver	2	Tomb 229	10^{th}-9^{th} c.	Petrie 1930: pl. 39: 445, 446	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Silver	1	Tomb 202	10^{th}-9^{th} c.	Petrie 1930: pl. 42: 309	Silver-plated earring over a bitumen core (see also Maxwell-Hyslop 1971: 226). Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Electrum	1	Tomb 202	10^{th}-9^{th} c.	Petrie 1930: pl. 42: 311	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 202	10^{th}-9^{th} c.	Petrie 1930: pl. 42: 298	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Unclear	1	Tomb 241	10^{th}-9^{th} c.	Petrie 1930: pl. 42: 35	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Silver	1	Tomb 239	10^{th}-9^{th}	Petrie 1930: pl. 30: 125	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 1	10^{th}-9^{th} c.	Mazar 2004: fig. 24: 1	---
Eshtemoʿa	Silver	1	From hoard	10^{th} c.	Yeivin 1990: fig. 16: 1	---
Tel Miqne-Ekron	Silver	1	Strata IC-IVA	11^{th}-10^{th} c.	Golani forthcoming A	Unclear context.

Earrings Type I.3a – Small Plain with Short Hoop and Decorated (Fig. 8: 15-20, 25)

A variant of the Type I.1 solid lunate earring that may be decorated by wire and/or granules. The wire may be wound around the lunate, as in a Late Bronze Age example from Megiddo (Fig. 8: 15, or may take a more complex arrangement as on an Late Bronze Age earring from Deir el-Balaḥ (Fig. 8: 16), where the wire is arranged in wavy fashion around the lunate. Such decorated earrings are locally found from the Late Bronze to the Persian period, though they are never very common among the repertoire of earring forms. Decorated parallels in gold from Assur, albeit without granular decoration and similar to the Megiddo example, date to the Neo-Assyrian period (Fig. 8: 18; Maxwell-Hyslop 1971: figs. 129-130, and see also with granular decoration on a gold earring from Zinjirli of 7^{th} century date, idem 1971: 234, fig. 124c) and similar gold earrings are also known from Ephesos, dated "about the 8^{th} century" (Marshall 1911: 72, pl. 9: 943, 944, 1065; Hogarth 1908: pls. 12: 13-17, 19; 18: 3-8) and Tell Halaf, of similar date (Hrouda 1962: pl. 33: 66-67).[154] These latter Iron Age earrings, however are of Assyrian style, with the two ends of the hoop meeting at the top, a feature not typical of the local Iron Age II that usually appears during the Late Bronze Age. Rich granular decoration on such small earrings appears in Assyria only nearing the end of the Iron Age II and may probably be associated with Syro-Phoenician crafstmen (Kraay and Moorey 1968: 195) arriving eastwards as a result of Neo-Assyrian conquests and deportations. Such earrings may possibly be seen on a fresco from Tell Barsip depicting a soldier wearing an earring with triangular decoration, probably indicating granulation (Fig. 8: 25).

[154] Another gold earring with granular and wire decoration is of unknown provenance, now found in the Damascus museum (Zouhdi 1989: 562, pl. 210: f).

The example from the late Iron Age II at Tel Miqne (Fig. 8: 17) bears a decoration of wire bands and triangles of granules on the lunate. The ends of of the crescent are topped with wound-wire coils which at one end forms a small depression for receiving the end of the hoop.[155] Due to its small size, this earring may have been cast in one piece along with its decorative elements, or, that these may have been applied onto a plain lunate body. However, close examination of this piece does not reveal which technique was used.

In this specimen, coils of wire are found around both ends of the 'crescent', one of which forms a catch for the tapering end of the hoop. Similar devices, often with several coils, are found on earrings from the Tawilan hoard (Ogden 1995: figs. 18.77, 8.18), Ketef Hinnom (Barkay 1986: 27 [English], 31 [Hebrew]) and at Akhziv (Dayagi-Mendels 2002: fig. 4.7: 35; though she gives a much broader chronological range for this tomb) all dated to the latter half of the Iron Age II. Culican (1958: 91) has proposed that this method of fastening is characteristic of Phoenician earrings (e.g., at Tharros; see Pisano 1987: pl. 44: 9), though in fact, it is found throughout the Near East during the first half of the 1st millennium and even earlier. See for example a gold earring from Karmir Blur in Urartu (Piotrovskii 1967: 56, fig. 38), a silver earring from Jordan, found in a looted hoard dated to the 5th century (Kraay and Moorey 1968: pl. 22: 129), and on the example from Deir el-Balaḥ of the 13th century (Fig. 8: 16; Dothan 1979: figs. 50, 58).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 136	Exact parallels at Kamid el-Loz and Tell es-Saʿidiyeh. Excavator's dating. Jewelry pieces are possibly heirlooms from 7th-6th c.
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 137	With extensive granular decoration. Excavator's dating. Jewelry pieces are possibly heirlooms from 7th-6th c.
Kamid el-Loz	Silver	1	Grave 14	6th-4th c.	Poppa 1978: pl. 11: Grab 14: 1; Hachmann and Penner 1999: pl. 11: 6; 16: 10	With loop-in-loop chain decoration. From a single-period burial.
Tell es-Saʿidiyeh	Silver	2	Grave 91	6th c.	Tubb 2007: fig. 13: 1	With loop-in-loop chain decoration. From a single-period burial of young male.
Tel Miqne-Ekron	Silver	1	Stratum IB	7th c.	Golani 1996a: 27-28; Golani and Sass 1998: fig. 10: 3	Originating from sealed context. With granular and wire decoration
Tell Jemmeh	Silver	1	Building II	8th c.	Golani forth-coming E	With wire wound around lunate.
Megiddo	Gold	1	Stratum VIIA	12th c.	Loud 1948: pl. 225: 18	With wire wound around lunate. Dating according to Mazar 2008.
Deir el-Balaḥ	Gold	1	Tomb 114	14th-15th c.	Dothan 1979: Ill. 50, 58	With crimpled wire decoration. From a single-period burial.

Earrings Type I.3b – Small Plain with Elongated Hoop and Decorated (Fig. 8: 21-24)

A variation on Type I.1a, this form also features various types of wire and/or granular decoration, generally found on the lunate portion of the earring. Examples from Eshtemoʿa (Fig. 8: 23) and Tell Jemmeh feature a raised band decoration of a braided wire strip flanked on both sides by straight wire, soldered to the underside of the lunate. The Tell Jemmeh example (Fig. 8: 24) has large granules soldered onto the lunate and the hoop.[156] The Hazor example (Fig. 8: 22) features wire wound around the lunate, a continuation of a technique found already during the Late Bronze Age. Examples of the Persian period, such as those from Yama (Fig. 8: 21), feature wound-wire around the lunate along with granule rings around the hoop.

As in the Type I.1a earring from which these forms are inspired, Type I.3b earrings appear primarily in the late Iron Age II and continue into the Persian period. Wound-wire around the earring hoop, but not the lunate, becomes a common decorative element at this time (and see below Type II Earrings), but is absent during the first half of the Iron Age II.

[155] A similar technique is found on an unpublished silver earring from the 1941 Makhouly excavations at Akhziv (Tomb 9, IAA reg. no.1948-346).

[156] This example appears nearly identical to a decorated hollow lunate earring from Busayra (see below Earring Type VI.2) but it is unclear whether the example from Tell Jemmeh is hollow or solid.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Yama	Silver	4	Cave 1 burial repository	5th-4th c.	Gal and Muqari 2002: fig. 9: 6, 12-14	With wound-wire and granule decoration. From a single-period burial.
Tel Michal	Silver	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig.25.10: 196	Partial, with granular decoration.
Tell Jemmeh	Silver	1	Unclear	6th-5th c.(?)	Petrie 1928: pl. 1: 17, 20: 48	With large granules on lunate and hoop. Excavator's dating.
Hazor	Silver	1	Stratum V	8th c.	Yadin et al. 1961: pl. 253: 17; 361: 20	With wound-wire decoration.
Eshtemoʿa	Silver	2	From hoard	10th c.	Yeivin 1990: figs. 16: 12, 13; 20	With braided wire decoration.
Tell Jemmeh	Gold	6	From jewelry hoard	12th (probably 10th) c.	Petrie 1928: pl. 1: 7-9, 12-13	With braided wire decoration and small ring attached on side. Excavator's dating. Author's suggestion: 10th-8th c. See n. 93 and n. 169.

Earrings Type I.6a – Multiple-Lobed 'Sling' (Fig. 8: 26-31)

Earrings made of solid (or hollow) double or triple wire, tapered at both ends as in a Type I.1 Solid Lunate Earring, and then soldered together side by side with the two tapered ends bent over and meeting at the side, producing a form reminiscent of a broad sling or hammock.

The example from Wadi el-Makkuk, dated to the late Iron Age I, is somewhat different as the sling is flattened, producing a similar effect but using less material. This earring was made by a different technique in which a thick lunate was flattened out; the resulting sling was then creased along two parallel lines in order to give the effect of a three-lobed division. The difference in construction and form of this latter piece notwithstanding, all these earrings are grouped as one type as the effect desired by the artisan was the same.

Later examples from the Persian period, such as those found at Tell Jemmeh, Kamid el-Loz and Tel Michal, feature a distinctive constructional technique that creates the same effect as a double-lobed sling earring but with less effort. A short section of a thick wire was added parallel to the bottom part of an earring, the ends of this addition are then wound around the hoop of the earring itself to fasten it on. The advantage of this technique is that no soldering is needed, the form being made by hand with only two pieces of tapering wire.

The origins of this earring type go far north and far back in time. Three and even up to seven-lobed examples in gold and silver are commonly found in southwestern Anatolia during the Early Bronze Age III such as at Troy, where they are identified as hair-rings (Antonova, Tolstikov and Treister 1996: 53-74, cat nos. 17-67; pp. 203-206 for a comprehensive discussion). Such earrings reach Tarsus during the same period (Maxwell-Hyslop 1971: 61-62, fig. 42c)[157] and the southern Levant by the Late Bronze Age such as an example from Tell el-ʿAjjul and even earlier during the Middle Bronze Age (17th century) as is apparent from four hollow examples from a burial at Tel Beth-Shean (Yahalom-Mack 2007: 618, ph. 9.6: 1-4). A similar 12th century specimen, in gold originates from Tell el-Hama in Syria (Riis 1948: 129, fig. 158). Any examples of this form found in the Iron Age II, such as from Eshtemoʿa and Tell el-Farʿah (S) (Fig. 8: 29-30) are suspect as heirlooms.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell Jemmeh	Copper alloy	1	Unclear	6th-4th c.?	Golani forthcoming E	With distinctive technique. Two lobes.
Kamid el-Loz	Copper alloy	5	Graves 2, 5, 12-13	6th-4th c.	Hachmann and Penner 1999: 16: 6	With distinctive technique. Two lobes.
Tel Michal	Copper alloy	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig. 25.10: 182	With distinctive technique. Two lobes.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 212	10th-9th c.	Petrie 1930: pl. 42: 333	With two lobes. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.

157 For a depiction in a mold of a female wearing such earrings that was found at Mari and dated to the Old Babylonian period, see Parrot 1959: 31, fig. 27; Musche 1992: 146, fig. 1.2.

Eshtemoʿa	Silver	1	From hoard	10th c.	Yeivin 1990: fig. 16: 8	With three lobes.
Wadi el-Makkuk	Pale gold (electrum?)	1	From hoard	11th-10th c.	Sass 2002: 24; fig. 3	With three lobes.
Tell el-Farʿah (S)	Unclear	1	Tomb 641	12th c.	Petrie 1930: pl. 30: 128	With two lobes. From a single-period tomb. Dating according to Laemmel 2003: Table 3.
Tel Beth-Shean	Gold	1	Stratum S-4	12th c.	Golani 2009: fig. 11.2: 6	With three lobes. Associated with a silver hoard.
Tell el-Farʿah (S)	Silver	1	Tomb 914	13th c.	Starkey and Harding 1932: pl. 48: 19	With two lobes. Dating according to Laemmel 2003: Table 6.
Tel Dan	Gold	1	Stratum VIIB	14th-13th c.	Biran and Ben-Dov 2002: fig. 2.135	With three lobes. From Mycenaean tomb. From a single-period burial.
Tell el-ʿAjjul	Gold	1	From one of the hoards of goldwork	16th-15th c.?	Petrie 1934: pl. 18: 79	With two lobes. Dating according to Negbi 1970.
Tel Beth-Shean	Gold	4	Stratum R5-Burial	17th c.	Yahalom-Mack 2007: pl. 9.6: 1-4	With two lobes, hollow.

Earrings Type I.6b – Sling – Flattened Lunate with Granule Decoration (Fig. 8: 32)

An uncommon variant of the sling form features a flattened-out lunate with an elongated hoop, the tapering ends meeting at one side. The underside of the sling is decorated by parallel rows of granules.

The only examples of this form found so far indicate its association to the late Iron Age II and into the Persian period. Along with Earring Types I.3a and I.3b, this form serves to illustrate the extensive use of granular decoration characteristic of this time span.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Yama	Silver	2	Cave 1 burial repository	5th-4th c.	Gal and Muqari 2002: fig. 9: 7, 8	With granule decoration. From a single-period burial.
Meqabelein	Silver	1	Burial cave	7th-6th c.	Harding 1950: pl. 15: 5	With granule decoration. From a single-period burial cave. Excavator's dating.

Earrings Type I.7 – with Elongated Hoop and Sculpted Crescent (Fig. 8: 33)

Earrings with an elongated hoop opening at the side, the lunate fashioned to represent a schematic anthropomorphic or zoomorphic depiction.

A rare development of the solid lunate shape is expressed in 'at least a dozen' such earrings found in a corroded mass at Lachish. Though this mass was not cleaned, they appear to represent the head and torso of a woman. Corrosion of these pieces precluded understanding of the finer details of the work.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Silver	'at least a dozen'	Burial cave 1002	8th c.	Tufnell 1953: 391, pl. 40: 1	Excavator's dating.

7.1.2. Earrings Type II – Solid Lunate with Fixed Attachment

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
II.1a	with Hollow Drop-Shaped Attachment	Iron Age IIB – Persian	Common	Fig. 9: 1-17
II.1b	with Solid Drop-Shaped Attachment	LB – Persian	Local LB-Iron Age II form adopted and developed by Neo-Assyrians.	Fig. 9: 18-24
II.2	with Solid Hemispherical, Globular or Lenticular Attachment	MB – Iron Age II	Common	Fig. 10: 1-14
II.3	with Cubical Attachment	Late Iron Age II	Uncommon, Phoenician type?	Fig. 10: 15-16
II.4	with Platform Attachment and Pyramids of Granules	Late Iron Age II – Persian	Uncommon	Fig. 10: 17-20

II.5	with Hollow, Fan-Shaped Attachment and Pyramids of Granules	Late Iron Age II – Persian	Uncommon	Fig. 10: 21
II.6a	with Attachment of Solid Granule Cluster	LB – Persian	Common, Late Iron Age-Persian forms differ from LB examples.	Fig. 11: 1-10
II.6b	with Attachment of Hollow Granule Cluster	Late Iron Age II – Persian	Common	Fig. 11: 11-17
II.6c	with Attachment of Solid Granule Cluster and Filigree Wire Decoration	Iron Age IIA	Uncommon, wire decoration on earrings usually found later.	Fig. 11: 18
II.7	with Ankh-Shaped Form	Iron Age IIB – Persian	Uncommon, Phoenician type	Fig. 11: 19-20
II.8a	with Attachment of Row of Granules	Iron Age II – Persian	Uncommon	Fig. 11: 21-24
II.8b	with Attachments of Perpendicular Rows of Granules	Early Iron Age II	Uncommon, Cypriot parallels	Fig. 11: 25-26
II.9	with 'Tassel' Attachment	Iron Age I – Iron Age IIA	Uncommon	Fig. 11: 27-34
II.10	with Solid Elongated Triangular Attachment	LB	Uncommon, Bucrania or bull's head(?) covered by granules.	---

Earrings Type II.1a – with Hollow Drop-Shaped Attachment (Fig. 9: 1-17)

The general form of this type includes an elongated hoop, the ends meeting at one side, with a hollow ball-, drop- or pear-shaped attachment soldered to the hoop bottom. Various modes of decoration are found on the hoop and the attachment.

The drop-shaped attachment of this earring type can take several forms constructed by various techniques. In all cases, the upper and lower portions were made separately and then joined together. In one example from Tel Miqne-Ekron (see Fig. 9: 13), the drop was apparently formed in three pieces, the middle portion constructed as a cylinder and decorated with parallel chased lines. In most cases, the two halves of the drop may have been made of sheet-metal or wound-wire. In the former case, the sheet-metal may have been formed on a doming block, or it may have been rolled into a conical shape, the seam then being soldered together (e.g., Fig. 9: 16). In the latter case, thin wire was coiled around a conical form in order to produce the conical upper portion of the drop (e.g., Fig. 9: 6-8, 10-14).

The technique of forming hollow attachments from coiled wire begins in the Late Bronze Age, such as on an attachment earring from Tell el-ʿAjjul (Petrie1934: pl. 14: 17). The technique is also found in the Iron Age I-II transition such as in the construction of tassel earrings from the Tawilan hoard in southern Jordan (Ogden 1995: 71-72, fig. 8.10, and see below Type II.9 Earrings; Fig. 11: 34). After forming, the drop was attached directly to the underside of the hoop, and a small hollow or solid interface often connects between the two portions (e.g., Fig. 9: 9).

The relatively large size of these earrings along with the numerous parts enjoined in their manufacture, enabled and even necessitated the use of many decorative features in order to conceal seams and strengthen joins. These may take the form of raised, braided or twisted wires and rows and triangles of granules. Large granules are often found at the lower tips of the drop.

The decorative use of wire bands and granulated triangles is relatively common on drop attachments. The same arrangement is found on earrings from as far away as Urartu in the 9th-7th centuries (Piotrovskii 1967: fig. 38; Maxwell-Hyslop 1971: 198, pl. 153), on a gold pendant from the Tharros necropolis dated to the 7th-6th centuries (Pisano 1987: 78-79, pls. 38a, 44a) and in gold pendants from Sardis in western Asia Minor, of the same date (Densmore Curtis 1925: pl. 3: 5-7). A pair of hollow silver egg-shaped earrings from Tell al-'Umayri in Jordan, probably also of late Iron Age date, employs a similar decorative scheme. The 'hoop' is composed of a tapering elongated wire 'tail' extending from the end of the attachment. Though the constructional and decorative techniques of the ʿUmayri example fit in well with other Type II.1a earrings of the Late Iron Age and early Persian period, the 'tail' attachment scheme is unusual and so far unique for Iron Age earrings.

On some of the drop attachments, concentric bands of granules concentrated on the lower, hemispherical portion of the piece, may represent the drop as an acorn, the stem formed by a small globule at the lower end of the earring.[158]

[158] Acorn-like pendants in various materials are found throughout the Phoenician world, though these are always hung from their stems such as at Salamis in gold, dated to the 6th-5th centuries (Gjerstad 1948: fig. 35: 38; Karageorghis 1970: pls. 153: 12, 242: 12 [Tomb 73]) and one rock-crystal and gold pendant (Gjerstad 1948: pls. 145: 95, 237: 95 [Tomb 60]). Further west, such pendants are known from the

Tightly wound-wire decoration is common on both sides of the hoop of such earrings, near its lower portion. This decorative technique is common among local earrings with attachments of the late Iron Age and early Persian periods such as at Tel `Ira (Freud 1999: fig. 8.2: 1-7), from a hoard of silver jewelry allegedly originating from Messayef in Jordan, dated by coins to the 5th century (Kraay and Moorey 1968: pl. 22: 138-140; 23: 147-148) and from tombs at Kamid el-Loz (Poppa 1978: pls. 4: 12-13 [Tomb 2], 9: 7-8 [Tomb 9], 12: 24-25 [Tomb 15], 14: 15-16 [Tomb 22], 20: 2 [Tomb 69], 21: 2 [Tomb 76]). In many of these examples, the hoops also feature solid globular attachments on their outer lower corners. This latter element is common in the southern Levant and appears regularly together with the wound-wire decoration on earring hoops during the 7th-5th centuries.

The hollow drop-shaped form with tightly wound-wire for the construction of cones and decoration of the hoop with wound-wire and globules, all appear to be local phenomena of the late Iron Age and Persian period. The use of an acorn motif, found as early as the end of the 7th century (see Fig. 9: 15), may have been spread westwards by the Phoenician expansion at the end of the Iron Age.[159]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	4	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 130, 132, 133-135, 141	Excavator's dating. Jewelry pieces are possibly heirlooms from 7th-6th c.
Kamid el-Loz	Silver	9	Graves 2a, 15, 22, 69, 76	5th c.	Poppa 1978: pls. 4: 12-13; 12: 24-25; 14: 15-16; 20: 2; 21: 2-3; Hachmann and Penner 1999: pl. 9	From single-period burials.
Tell al-'Umayri	Silver	2	Unclear	6th-4th c.	Platt and Herr 2002: fig. 7.5: 64-65	Unusual hoop.
En Gedi, Morinaga Cave	Silver?	1	Burial cave	6th-4th c.	Shai, Porath and Eshel 2007: fig. 3: 7	Partial. Identical to earring depicted in Fig. 9: 11.
Galʿed Site 62	Silver	1	Burial	6th-4th c.	Mankind in the Galed Hills 2003: 11	From M. Mayer collection, Kibbutz Galed.
Tell es-Saʿidiyeh	Silver	2	Grave 159	6th c.	Tubb 2007: fig. 112, 4)	---
Ketef Hinnom	Silver	6	Burial cave 25	7th-5th c.	Barkay 1986: 27 [English], 30 [Hebrew])	Found in repository of tomb.
Mount Zion (Jerusalem)	Silver	2	Burial cave	7th-5th c.	Unpublished	IAA reg. no.75-1199
Meqabelein	Silver	2	Burial cave	7th-6th c.	Harding 1950: pl. 15: 4	Corroded. Excavator's dating.
Tel Miqne-Ekron	Silver	7	Stratum IB	7th c.	Golani 1996a: 28-30; Golani and Sass 1998: 64, fig. 10: 5, 6	Six examples from sealed hoards.
Amman	Silver	5	'Ammonite' tomb	8th-4th c.	Hadidi 1987: figs. 8: 8; 11: 2, 4, 11, 19, 20; Der Königsweg: 177, fig. 193	Poor documentation. Mixed tomb
Tel Beth-Shemesh	Copper alloy?	4	Tomb 8 repository	8th-7th c.	Mackenzie 1912-1913: pl. 59: 11-13, 15.	Corroded. Mixed tomb. Excavator's dating.
Lachish	Copper alloy	5	Burial cave 1002	8th c.	Tufnell 1953: pl. 57: 8	Mixed tomb. Excavator's dating.
El-Jib (Gibeon)	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 62-30-941

Earrings Type II.1b – with Solid Drop-Shaped Attachment (Fig. 9: 18-24)

Earrings with short hoop opening at the top. A drop- mushroom- or nail head-shaped solid attachment is attached to the base of the hoop. However, the entire earring may have also been cast in one piece.

Tharros necropolis in ivory, dated to the 7th-6th centuries (Pisano 1987: 112 [Tomb 28], pls. 68: m, 128: 28/22) and at numerous other sites such as Ibiza in Spain, which yielded examples in ivory and silver from the end of the 5th century (San Nicolas Pedraz 1991: fig. 2b). Etruscan gold pendants in the shape of acorns are known from the early 5th century (Marshall 1911: 144, pl. 13: 1458) and another golden acorn pendant, alleged to have come from Italy and dated to the late 4th to early 3rd century, is known from a private collection (Hoffman and Davidson 1967: 124-125, fig. 42).

159 See above, n. 155.

This form first appears during the Late Bronze period such as at Tell el-ʿAjjul, Tell Abu Hawam and Lachish. The Late Bronze Age examples, usually found in gold, electrum and also in copper alloy, have an elongated solid drop attached to a hoop that opens from the top. The attachment is often decorated with incised and hatched lines, as in the examples from Tell el-ʿAjjul. This type was locally produced, as indicated by jewelry mold found in the Late Bronze Age strata at Hazor (Yadin et al. 1961: pl. 158: 31). The mold indicates that the attachment and hoop were cast in one piece.

This form has not been found during the Iron Age I[160], and resurfaces during the latter portion of the Iron Age II, when the attachment becomes much shorter. It is not common during the late Iron Age II and isolated examples are so far known only from Samaria, Megiddo and a later example dated to the 5th, possibly a 7th-6th centuries heirloom, is published from the Jordanian hoard. Like their Late Bronze Age antecedents, the Iron Age II examples bear earring hoops that open from the top, a feature generally characteristic of local Middle Bronze and Late Bronze Age earring hoops and not those of the Iron Age II that usually open at the side.

This form enjoyed a wide distribution during the Iron Age IIB as evidenced by a silver example dated to the 8th century from Zinjirli (Fig. 9: 22).[161] The nail- or mushroom-shaped drop form appears to have been adopted by the Neo-Assyrians who created numerous elaborations on this basic scheme, commonly worn by kings and deities depicted on Neo-Assyrian palace reliefs (see Madhloom 1970: pl. 68; Maxwell-Hyslop 1971: figs. 126-127). No local examples of the elaborate Neo-Assyrian forms are known. Depictions of types such as those found at Megiddo, Samaria and in the Jordanian hoard[162] (Fig. 9: 20-21), are found in the palace reliefs of Ashurbanipal II (Madhloom 1970: pl. 68: 2-4; Maxwell-Hyslop 1971: fig. 127: 2-5) and specimens are known from Cyprus, where they are described as earrings with ‘nail-head’ attachments made of gold, gilded silver and silver (Myres 1914: 383, nos. 3210-3231; Gjerstad 1948: fig. 31: 11-12; 34: 20).[163]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 130	With 8-pointed star incised at bottom. Excavator’s dating. Jewelry pieces are possibly heirlooms from 7th-6th c.
Samaria	Copper alloy	1	Summit, Period VIII	7th c.	Crowfoot, Crowfoot and Kenyon 1957: fig. 105: 12	Partial. Excavator’s dating.
Megiddo	Copper alloy?	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 86: 14	Excavator’s dating.

160 However, some of the Type II.9 ‘Tassel’ Earrings (see below), generally dated to the late Iron Age I and early Iron Age II, do show an affinity to the Late Bronze Age forms of Type II.1b.

161 A bronze example from Shahr-I-Qumis in Iran is associated with the Parthian period (Muscarella 1988: 109, fig. 177), though it is unclear whether this was a hollow or solid attachment.

162 Though commonly depicted in the Neo-Assyrian east, the antecedents of this type appear to have originated in the southern Levant during the Late Bronze Age. Latter-day Neo-Assyrian forms may have adopted this fashion nearing the end of the Iron Age when craftsmen, gifts and booty were directed eastwards as a result of the Assyrian military campaigns to this region. The Neo-Assyrian connection for this earring type is also illustrated in the example from the Jordanian hoard (Fig. 9: 20) that bears a wound-wire decoration on both sides of the hoop, a common decorative feature of the Late Iron-Early Persian period in the southern Levant and Jordan (see above) and at the bottom of the attachment, is an incised eight-pointed star, possibly alluding to the traditional symbol of the goddess Ishtar or her local counterpart (Kraay and Moorey 1968: 198). A nearly identical earring is known from Zinjirli in Northern Syria, dated to the 7th century (Andrae 1943: pl. 45: g).

163 A variant on this form with three lobes is known from Neo-Assyrian palace reliefs (e.g., Maxwell-Hyslop 1971: fig. 127: 6-13), on an ivory panel from Nimrud showing tri-lobed earrings being brought as tribute (idem 1971: fig. 134) and on other ivory depictions that depict the well-known ‘woman at the window’ theme (Orchard 1967: pl. 30: 137-138; 31: 143-144, 146-147). At the periphery of the Neo-Assyrian empire, this tri-lobed variant is also generally recognized as Neo-Assyrian, described as a ‘thickened circlet with three trumpet studs’ (Culican 1978: 135). This form is clearly depicted on a Neo-Assyrian cylinder seal of exquisite quality, dated to ‘around 700 BCE’ which depicts a high official standing before an armed Ishtar (Collon 1990: fig. 18; 2001b: 127-128, pl. 19: 240). The earring is regarded as an offering to Ishtar but is depicted in the upper portion of the scene, an unlikely position to depict an offering. The three-lobed form may also be seen as a schematicized depiction of the ‘winged disk’ symbol (Moortgat 1927: 192), a well-known Neo-Assyrian motif representing divinity (Ornan 2005a; 2005b) or may also represent three pomegranates on an earring hoop (Gubel 205: 130-131). However, Collon discounts these assumptions as ‘improbable’, identifying the object as an earring that may have been a military decoration (Collon 2001b: 128). An example of such an earring made of copper alloy is known from Tomb 40 at Sarafand in Lebanon dated to the 10th-9th centuries, found with a Phoenician-type Black-on-Red juglet (Culican 1978: fig. 3, 135-136) and a mold for such an earring has been found at Tell Fakheriyeh in the upper Euphrates valley, dated to the 8th-7th centuries (McEwan et al. 1958: 50-51, pl. 50: 1). A silver(?) example is also known from Tell Halaf, dated to the 8th century (Fig. 9: 23; Hrouda 1962: pl. 33: 61-63). This form of earring also appears to be depicted on a male statue from ʿIrjan in Jordan of unknown date (Fig. 9: 24), indicating that this form was locally known and in use, though no local examples have yet been found. Maxwell-Hyslop (1971: 241) asserts that the triple-armed form begins during the 9th century and observes that in all pictorial depictions showing such earrings being brought as gifts, they are carried by tributaries from the west as well as from the east. A depiction of a triple-armed earring on a 6th century Greek vase may represent one of the forms either imported or copied by the Greeks in the 7th-6th centuries, leading some scholars to suggest a Phoenician inspiration, possibly a Sidonian source for this form (Kardara 1961; Gubel 2005: 131, fig. 18), though three-lobed or three-armed earrings are not a common feature in the repertoire of Phoenician jewelry.

Tell Abu Hawam	Gold	1	Stratum V	14th-13th c.	Hamilton 1934: pl. 39: 417; 34: lower left	Excavator's dating. See also Artzy 2008.
Lachish	Copper alloy	1	Pit	15th-13th c.	Tufnell 1958: pl. 25: 29	Excavator's dating.
Tell el-ʿAjjul	Gold	9	Unclear	15th-13th c.	Petrie 1932: pl. 3: 17-20, 30; 5: upper left; 1934: pl. 34: 533	Excavator's dating.
Tell el-ʿAjjul	Silver	1	Unclear	15th-13th c.	Petrie 1932: pl. 3: 28	Partial. With slightly bulbous drop. Excavator's dating.
Tell el-ʿAjjul	Gold	1	Governor's tomb	15th- 13th c.	Petrie 1933: pl. 7: upper right; 8: 13	Excavator's dating.
Tell el-ʿAjjul	Copper alloy	1	Unclear	15th- 13th c.	Petrie 1932: pl. 18: 247	Excavator's dating.
Tell el-ʿAjjul	Gold	1	Hoard 1299	16th-15th c.	Petrie 1934: pl. 14: 17	Drop-or oval-shaped attachment. Unclear if hollow or solid. Dating according to Negbi 1970.
Tell en-Naṣbeh	Copper alloy?	1	Dump Z	Unclear	McCown 1947: pl. 112: 23	Corroded.

Earrings Type II.2 – with Solid Hemispherical, Globular or Lenticular Attachment (Fig. 10: 1-4)
This type bears a plain hoop, usually thickened at its bottom, with a solid hemispherical, globular or lenticular attachment soldered onto the lower, outer side of the crescent.

This type is a local form, beginning during the Middle Bronze Age, and continuing throughout the Late Bronze and Iron Age I. It becomes common during the Iron Age II and into the Persian period when the attachment becomes slightly larger. An Iron Age II variant has a ring of granules fixed as a collar around the interface of the globule to the earring hoop.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Mazar	Silver	2	Grave 42	6th-5th c.	Yassine 1984: 38, 95, pl. 55: 131, 132	With granule collar at interface.
Lachish	Silver	2	Tomb 106	7th-6th c.	Tufnell 1953: pl. 54: 2-3	With granule collar at interface. Mixed tomb. Excavator's dating.
Lachish	Copper alloy	3	Tomb 106	7th-6th c.	Tufnell 1953: pl. 54: 1, 4, 5	Mixed tomb. Excavator's dating.
Tel Miqne-Ekron	Silver	2	Stratum IB	7th c.	Golani 1996a: 30-31, fig. 6: 7; Golani and Sass 1998: 64, fig. 10: 4	From sealed context. With granule collar at interface.
Tel Miqne-Ekron	Gold	1	Stratum IB	7th c.	Golani forthcoming A	From sealed context. With carnelian bead strung on hoop.
Akhziv (er-Ras Cemetery)	Silver	1	Tomb ZR XIV	8th-6th c.	Dayagi-Mendels 2002: fig. 4.12: 13	Mixed tomb. Dating according to Dayagi-Mendels.
Megiddo	Copper alloy?	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 86: 21	Excavator's dating.
Tel Beth-Shemesh	Copper alloy	1	Tomb 3	8th-7th c.	Mackenzie 1912-1913: pl. 38: 7	Poor documentation. Excavator's dating.
Tel Beth-Shemesh	Copper alloy	2	Tomb 5	8th-7th c.	Mackenzie 1912-1913: pl. 43: 24-25	Poor documentation. Excavator's dating.
Tel Beth-Shemesh	Copper alloy	2	Tomb 8 repository	8th-7th c.	Mackenzie 1912-1913: pl. 69: 11-13; 61: 22	Poor documentation. Excavator's dating.
Beth Zur	Copper alloy	1	Stratum III, Field II	8th-7th (?) c.	Sellers et al. 1968: pl. 43c: upper center	Partial.
Akhziv cemetery	Copper alloy	1	Tomb no. 1, Phase 3	9th –7th c.	Mazar 2004: fig. 24: 20	Partial.

Lachish	Silver	1	Level IVb	9th-8th c.	Sass 2004: fig. 28.17: 1, 28.32: 1	Partial.
Lachish	Silver	1	Tomb 1004	9th c.	Tufnell 1953: pl. 57: 9	Excavator's dating.
Hazor	Copper alloy	1	Stratum VIII	9th c.	Spaer 2012: fig. 9.8: 12	---
Tell el-Farʿah (S)	Gold	1	Tomb 238	10th-9th c.	Petrie 1930: pl. 37: bottom left, second row, far right; 42: 310;	See also Maxwell-Hyslop 1971: 226, pl. 201. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Silver	1	Tomb 238	10th-9th c.	Petrie 1930: pl. 42: 297	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	1	Tomb 212	10th-9th c.	Petrie 1930: pl. 42: 332	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 201	10th-8th c.	Petrie 1930: pl. 41: 277	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Lachish	Silver	1	Tomb 218	10th-9th c.	Tufnell 1953: pl. 55: 43	Excavator's dating.
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 24: 19	With granule collar at interface.
Tawilan	Gold	1	From hoard	10th-9th c.	Ogden 1995: fig. 8: 24	---
Hazor	Silver	1	Stratum XB	10th c.	Spaer 2012: fig. 9.8: 11	---
Tell Jemmeh	Silver	4	From hoard	12th (probably 10th c.)	Petrie 1928: 10, pl. I: 4	Partial, corroded. Excavator's dating. Author's suggestion-10th-8th c. See n. 93 and n. 169.
Eshtemoʿa	Silver	6	From hoard	10th c.	Yeivin 1990: fig. 16: 3-7, 7; 19; 20	---
Ein Hofez	Silver	4	From hoard	10th c.	Y. Alexandre, pers. comm.	Unpublished.
Tel Beth-Shean	Gold	1	From southern temple	11th-10th c.	(Rowe 1940: pl. 30: 32	Very small. Excavator's dating.
Tel Beth-Shean	Gold	4	Level V	11th c.	Unpublished	From a small hoard associated to the Northern Temple. Found together along with silver scrap (UM reg. no. 29-105-23).
Tel Beth-Shean	Silver	1	Stratum S-4	12th c.	Thompson 2009: fig. 11.1: 9	Associated with a silver hoard.
Lachish	Gold	1	Burial cave 570	13th-12th c.	Tufnell 1958: pl. 25: 63	Mixed tomb. Excavator's dating.
Tell el-Farʿah (S)	Silver	1	Tomb 952	13th c.	Starkey and Harding 1932: pl. 49: 952	From a single burial of a child. Dating according to Laemmel 2002: Table 6.
Tell el-ʿAjjul	Copper alloy	1	Unclear	15th-13th c.	Petrie 1932: pl. 18: 243	Excavator's dating.
Tell el-ʿAjjul	Gold	11	Groups 1740, 1468	15th-13th c.	Petrie 1934: pls. 17, 18: 84, 92, 101, 107-108, 114-119, 34: 532, 534	Dating according to Negbi 1970.
Megiddo	Gold	1	Stratum X, T. 3054	17th-16th c.	Loud 1948: pl. 225: 5	Found in position as earrings, Loud 1948: fig. 338. Decorated with granules? Excavator's dating.
Gezer	Silver	2	From hoard	19th-18th c.	Macalister 1912b: fig. 288: 7, 10	From silver hoard of personal ornaments. With hoops that open at the top. Excavator's dating.
Gezer	Gold	1	Burial cave 28 II	19th-18th c.	Macalister 1912b: pl. 31: 14	With hoop that opens at top. Excavator's dating.

Tell Jemmeh	Silver	1	No context	---	Golani forthcoming E	Partial
Tel Beth-Shean	Gold	2	Unclear	Unclear	Unpublished	UM reg. nos. 29-105-88, 29-105-105
Tel Beth-Shemesh	Silver	1	Room 318	Unclear	Unpublished	UM reg. no. 61-14-1070

Earrings Type II.3 – with Cubical Attachment (Fig. 10: 15-16)

A unique earring attachment from Tel Miqne-Ekron (Fig. 10: 15) consists of a burgundy colored ochre(?) cube, pierced lengthwise and fitted with folded sheet-silver caps at both ends. On the outer surface of one of these caps are the partial remains of a soldered join with an impression of what appears to have been a crescentic earring hoop. While a complete attachment lacking the earring hoop is known from Tel Miqne-Ekron, a possible fragment of such an attachment consisting of one of the caps made of silver is known from the Phoenician necropolis at Akhziv (Fig. 10: 16).

Somewhat similar to the example from Tel Miqne-Ekron, pendants topped by a small pyramid are known throughout the Phoenician world. In a Carthaginian tomb they appear in alabaster and are dated to the 3rd century (Moscati 1988: 632: pl. 285), at Villaricos in Spain they appear in bone and date from the 6th to the 3rd centuries (Moscati 1988: 397) and at the Tharros necropolis, examples made of gold are dated to the 7th-6th centuries (Pisano 1987: pls. 43: i, 47: f) though the latter are considered to be amulet cases. Cippi, however, appear to belong primarily to the classical world and are not typical of the Iron Age.

The technique of fitting sheet-metal caps onto an object of another material is not new to the Iron Age and is used, for example, in the construction of a gold pendant earring holding a cylindrical faience pendant from Lachish, dated to the Late Bronze Age (Tufnell 1958: pl. 25: 16) and is also found in the use of two round silver caps on both sides of a cylindrical bead of rock crystal from a 7th century hoard associated with Stratum IB Tel Miqne-Ekron and at the Akhziv necropolis (see below Part II, sect. 7.5.7., Type VII.1 Composite Beads). An intriguing object from a Late Iron Age – Persian period tomb at Meqabelein in Jordan features a cube, possibly of siliceous material, capped by a metal fitting attached to the arm of a fibula (Harding 1950: pl. 13: 2).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Burak (Lebanon)	Silver	1	Unclear	6th-5th c.	A. Schmidtt, pers. comm.	Fragment of cap only. Excavator's dating.
Tel Miqne-Ekron	Silver and paste(?)	1	Stratum IB	7th c.	Golani 1996a: 31, fig. 6: 8; Golani and Sass 1998: 64, fig. 10: 7	Partial. From sealed context.
Akhziv cemetery	Copper alloy	1	Tomb ZR XXIX	9th-7th c.	Dayagi-Mendels 2002: fig. 4.21: 61	Partial, mixed tomb. Dating according to Dayagi-Mendels.

Earrings Type II.4 – with Platform Attachment and Pyramids of Granules (Fig. 10: 17-20)

Earrings with an elongated hoop, decorated on both sides by tightly wound-wire. The attachment to the hoop consists of one or more horizontal bars or platforms to which pyramids of granules are attached.

A pair of earrings from Tel Miqne-Ekron has a hoop attached to a solid rectangular pillar, on the lower portion of which is soldered a small rectangular plate, attached perpendicular to the pillar. From the bottom of the plate are attached two inverted pyramids of granules, each capped by a single large granule. The pillar itself is decorated with an elongated 'X' shaped engraved design on both its long wide sides.

Three very elaborate earrings from a Jordanian hoard have a similar elongated hoop with wound-wire decoration and a large granule decorating the lower portion of the hoop at its bend. To the underside of the hoop are found three superimposed horizontal rectangular silver strips (platforms) separated by regularly spaced pyramids of granules while inverted granule pyramids are also attached to the underside of the lower strip. Very close parallels for these latter earrings have been found at Tell el-Mazar in Jordan.

Though somewhat different in their arrangement, the earrings from all three sites share a similar constructional and decorative concept. The uniqueness of this elaborate type along with the secure context and dating of the examples from Tel Miqne-Ekron, appear to lend credence to the proposal that the earrings from the Jordanian hoard, dated by associated coins to the 5th century, are heirlooms that are more likely to be associated with the 7th-6th centuries.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	3	From looted hoard	5th c.	Kraay and Moorey 1968: 201-201, pl. 12: 138-140	Excavator's dating. Jewelry pieces are possibly heirlooms from 7th-6th c.

Tell el-Mazar	Silver	2	Grave 4	7th-5th c.	Yassine 1984: fig. 55: 129	---
Tel Miqne-Ekron	Silver	2	Stratum IB	7th c.	Golani forthcoming A	From sealed context.

Earrings Type II.5 – with Hollow, Fan-Shaped Attachment and Pyramids of Granules (Fig. 10: 21)

Elaborate earrings with an elongated earring hoop, flattened at its lower portion to which is soldered a flat, fan-shaped attachment with four inverted pyramids of granules attached onto its bottom. The 'fan' was made by coiling silver wire around a wide cone, after which the coiled cone was flattened and then creased in radial fashion along its length. The pyramids are composed of large granules at the base, onto which were soldered smaller ones.

A variant of this form was found in a mixed tomb at Akhziv, probably to be associated with the 7th century, bearing a broad, flattened lunate, from which extends a hollow, oval, pillar-like attachment, ending in a granular decoration.

Though no other parallels are found for this special form, all the manufacturing and decorative techniques employed in its construction are locally well-known during the Iron Age II.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	2	Stratum IB	7th c.	Golani forthcoming A	From sealed contexts.
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 3	9th-7th c.	Mazar 2004: fig. 24: 21	Mixed context, probably 7th c.

Earrings Type II.6a – with Attachment of Solid Granule Cluster (Fig. 11: 1-10)

Earrings with rounded or elongated hoop, tapering at both ends and slightly thickened at the bottom to which is soldered a cluster of three or more solid granules. Often termed 'mulberry', 'cluster' or 'grape cluster' earrings (Maxwell-Hyslop 1971: 116), the local development of this type may be traced from the end of the Middle Bronze Age (16th-15th centuries) to the Persian period and examples are also found well into the classical periods (Rosenthal-Higginbottom 2002: fig. 3). Though generally identified as earrings, this form could have also functioned as a nose-ring as is evident on an above-mentioned gold example found *in situ* in a Late Bronze Age burial at Megiddo (Loud 1948: pl. 225: 9, T. 2121).

In the southern Levant the type first appears, nearly always in gold, at the very end of the Middle Bronze Age such as at Megiddo, becoming common during the Late Bronze Age such as at Tell el-ʿAjjul, Lachish and Gezer. Nearly all the local Bronze Age examples are of gold and consist of a rounded hoop opening at the top with a cluster of small solid granules at the bottom. At Gezer, Macalister (1912b: 101) noted that this specific form was characteristic of the Second Semitic (Middle Bronze?) period.

Though the granules could have been soldered on, since the granulation technique requires time and skill, a more simple method having more or less the same desired effect was produced by casting. Stone molds for casting of this form that include the hoop and attachment as one piece[164] known at Late Bronze Age Alalakh and Ras Shamra-Ugarit (Maxwell-Hyslop 1971: 136, 138), Gezer (Fig. 11: 10) and apparently also at Tell Jemmeh (Petrie 1928: pl. 20: 45; 42: 3) associated with the late Iron Age I settlement, indicating that this form was locally produced.[165] It appears in gold at the same time throughout northern Syria and at Mari (Maxwell-Hyslop 1971: 116, 131) and Cyprus such as in Tombs 3 and 8 of the Late Cypriot period at Enkomi (Gjerstad et al. 1934: pls. 78: 3.53, 3.155, 80: 2.12, 2.46, 2.48). Local Late Bronze and Cypriot examples always feature rounded hoops that open at the top (Fig. 11: 1-3).

Iron Age I examples, such as those from Tell el-Farʿah (S) (Fig. 11: 3-4) are made of gold or silver and feature hoops that open at the top and at the side, a situation also reflected in Cyprus, such as at Tombs 417, 420 and 422 at Lapithos (Gjerstad et al. 1934: pls. 51: 2.16, 2.10, 53: 2.21, 54: 4.2) where wound-wire decoration on the hoop is also found. The form continues into the 1st millennium at sites throughout the Mediterranean basin where this fashion was probably spread by the Phoenicians (see Pisano 1987: pls. 38: e, 44: g and p. 80 for further discussion and references) and is also found in the northern Levant, such as at Hama, Period I (Riis 1948: 129, fig. 159).

During the Iron Age II, side-opening hoops become prevalent in the southern Levant (Fig. 11: 5-9) and in Cyprus (Gjerstad et. al. 1934: pls. 44: 1.32, 1.36, 1.38, 1.89, 55: 2.46, 2.6, 2.9), though the older fashion of top-opening hoops also survives, though to a limited degree. In the latter portion of the Iron Age II and the Persian pe-

164 A stone jewelry mold from Zinjirli in Northern Syria shows an earring hoop and conical attachment to be cast in one piece and not soldered together (Andrae 1943: fig. 16: a).

165 Maxwell-Hyslop also mentions another steatite mold of this earring type that originates from Kuyundjik in Turkey, now in the British Museum (Maxwell-Hyslop 1978: 181).

riod, the balls become larger and the hoop elongated, often decorated with wound-wire, as at Tel ʿIra (Fig. 11: 8). At this time, a variant of this form with larger, hollow balls also appears (see below Type II.6b Earrings). A singular example of the Persian period from Kamid el-Loz (Fig. 11: 9), features small solid granules at the bottom of a rounded hoop that is unusual for this period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
El-Arub	Silver?	1	Tomb	5th c.	Stern 1971: pl. 3: b	Partial. From a single-period tomb. Elongated hoop.
En Gedi, Morinaga Cave	Copper alloy?	1	Burial cave	6-4th c.	Shai, Porath and Eshel 2007: fig. 3: 8	---
Kamid el-Loz	Gold	1	Grave 129	6th-4th c.	Hachmann and Penner 1999: pl. 8: 10	With bead threaded on rounded hoop that opens at side.
Tel Michal	Copper alloy	2	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 7: 11-12	Partial, From individual cist tomb. Elongated hoop.
Mitzpe Afeq	Silver	1	From surface	Probably 6th-4th c.	Golani forthcoming B	Attachment only.
Tell Jawa	Silver	1	Unclear	Prob. 7th-6th c.	Daviau 2002: 42-43, fig. 2.21: 1	Partial
Tel ʿIra	Silver	1	Tomb 13	7th c.	Freud 1999: fig. 8.2: 1	With wound-wire decoration on the lower portion of hoop and a granule at each knee of hoop. Elongated hoop.
Tel ʿIra	Silver	2	Tomb 14	8th-7th c.	Freud 1999: fig. 8.2: 7-8	With wound-wire decoration on the lower portion of hoop and a granule at each knee ofelongated hoop. Author's suggested redating-7th-6th c. See n. 164.
Hazor	Silver	1	Stratum VC	8th c.	Spaer 2012: fig. 9.8: 10	Crescent slightly flattened as in 'sling' earrings.
Lachish	Electrum	1	Tomb 116	9th-7th c.	Tufnell 1953: pl. 54: 73	Mixed tomb. Hoop opens at side. Excavator's dating.
Lachish	Copper alloy	2	Burial cave 4005	10th-6th c.	Tufnell 1953: pl. 57: 41	Mixed cave. Elongated hoop. Excavator's dating.
Eshtemoʿa	Silver	3	From hoard	10th c.	Yeivin 1990: fig. 16: 10; 20	Partial
Tel Beth-Shean	Silver	1	Level V	11th c.	Rowe 1940: pl. 29: 34	Partial. From foundation deposit of southern temple.
Tell el-Farʿah (S)	Gold	1	Tomb 605	11th c.	Petrie 1930: pl. 33: 382	Elongated hoop. Very similar to later examples. From a single-period tomb. Dating according to Laemmel 2003: Table 3.
Tell el-Farʿah (S)	Silver	1	Tomb 956	12th c.	Starkey and Harding 1932: pl. 50: 99	Hoop opens at top. From a single-period tomb. Dating according to Laemmel 2003: Table 6.
Tell el-Farʿah (S)	Silver	1	Tomb 961	13th c.	Starkey and Harding 1932: pl. 50: 94; 49: 961	With wire clasp. Hoop opening at side. From a single-period burial. Dating according to Laemmel 2003: Table 6.
Gezer	Silver	1	Unclear	15th-13th c.?	Macalister 1912c: pl.136 6a	With rounded hoop that opens at top. Excavator's date.
Beth Shean	Gold	1	Tomb 42	15th c.	Oren 1973: fig. 34: 11	With rounded hoop that opens at top.
Tell el-ʿAjjul	Gold	1	Group 1204	15th c.	Petrie 1934: pl.10: middle row second from left	With rounded hoop that opens at top. Dating according to Negbi 1970.

Tell el-ʿAjjul	Gold	4	Group 1313	15th c.	Petrie 1934: pls.15: at bottom; 16: 70, 71, 75, 76	With rounded hoops that open at top. Dating according to Negbi 1970.
Tell el-ʿAjjul	Gold	1	Group 1532	15th c.	Petrie 1934: pl. 21: 201	With rounded hoop that opens at top. Dating according to Negbi 1970.
Tell el-ʿAjjul	Gold	2	Group 1312	15th c.	Petrie 1934: pls. 19; 20: 142-143,	With rounded hoop that opens at top. Dating according to Negbi 1970.
Tell el-ʿAjjul	Gold	5	Groups 1740, 1468	15th c.	Petrie 1934: pls. 17, 18: 82, 102, 103, 125, 126	With rounded hoop that opens at top. Dating according to Negbi 1970.
Lachish	Electrum	2	Burial cave 4004	16th-13th c.	Tufnell 1958: pl. 25: 15	With rounded hoops that open at top. Excavator's dating.
Megiddo	Gold	1	Stratum IX	16th-15th c.	Loud 1948: pl. 225: 9	With rounded hoop that opens at top. Excavator's dating.
Tel Beth-Shean	Gold	1	Unclear	Unclear	Unpublished	UM reg. no. 29-105-3

Earrings Type II.6b – with Attachment of Hollow Granule Cluster (Fig. 11: 11-17)

Though of similar outward form, a variant of the granule cluster attachment earring features hollow spheres instead of solid granules. This type has also been termed 'high-loop cluster-ball pendant' (Shea and Maxwell-Hyslop 1985: 169) and features a cluster of three, four or even up to seven hollow balls, attached to the bottom of the hoop. Usually found in silver, less often in gold[166], all examples feature an elongated thin hoop, and most bear tightly wound-wire decoration and often a small solid or hollow globule or bulbous knob at each knee of the hoop. Granular decoration may be found interspersed between the balls such as in the example from Kamid el-Loz (Fig. 11: 17), and may have also been intended to strengthen the joins between them. One of the examples from Tell el-Farʿah (S) features inverted pyramids of granules on the underside of the ball cluster (Fig. 11: 12). The balls themselves were made of two halves of sheet-metal, probably shaped on a doming block and then joined by soldering. Many of these feature a small pierced hole in the ball, purposefully made to avoid rupture of the sphere by the hot air produced during the soldering process (see Maxwell-Hyslop 1978: 180; Shea and Maxwell-Hyslop 1979: 12; 1985: 169; Webb 1986: 39-40; Freud 1999: n. 4) for more details on the manufacturing process).

In the literature (Maxwell-Hyslop 1978; Shea and Maxwell-Hyslop 1979; 1985), this form is often not distinguished from the Type II.6a form described above (e.g., Freud 1999: 396-397). Though Type II.6b enjoys a general similarity to the Type II.6a Earring with Attachment of Solid Granule Cluster discussed earlier, the size, method of fabrication, decorative elements and restricted chronological range from the 6th-4th centuries, merit a separate typological distinction, though both forms are partially contemporaneous.

Such earrings without wound-wire decoration on the hoop, are found in silver at Tomb 19 at Deve Hüyük in Turkey, dated to the 5th century (Fig. 11: 16). Moorey proposes an eastern (Iranian or Babylonian) ancestry for this form (1980: 82-83) as does Maxwell-Hyslop (1978: 181), but most known examples, generally dated to the 6th-4th centuries,[167] are found in the southern Levant and no representations of this form are known from Neo-Assyrian or Achaemenid depictions.[168] The specific decorative attributes, such as wound-wire on the lower portion of the hoop and the bulbous projections on the knee, however, appear to be a Levantine feature. They are common on other earring types during the Late Iron Age II and Persian periods and may be seen as a local innovation. In addition, use of a globular cluster on an earring hoop goes far back to the very beginning of the Late Bronze Age (see above Type II.6a Earrings). This earring type, even if possibly influenced by Iranian examples, is still more probably to be seen as a product of local workshops and not an eastern import. Local traditions certainly continued after the Persian conquest and artisans such as jewelers did not need the Achaemenid 'Court style' for inspiration (Shea and Maxwell-Hyslop 1985: 169).

166 Metallurgical analysis of the Tell el-Farʿah (S) earrings revealed them to have been made of good quality silver and not base silver. Metallurgical analysis on the Lachish earring revealed it to have been made of relatively pure gold, and examination of the soldered joins between the globes detected a certain amount of copper (Shea and Maxwell-Hyslop 1979: 173), suggesting the use of a gold-copper compound as a soldering agent employing a hard colloidal soldering technique (see Chapter 2.1.2.9.).

167 If the dating of Tomb 14 at Tel ʿIra to the 8th-7th c. is correct (Freud 1999), then this is the earliest example of this type as all other examples do not appear to precede the 6th century. This earring, however, is identical to the others found at the site, all of which are associated with a later date. On this basis, the 8th-7th century date of Tomb 14 is called into question and a slightly later date in the 7th-6th c. is suggested.

168 Maxwell-Hyslop does mention a depiction on a funerary slab from Marash in southeastern Turkey, now found in the Adana local museum that depicts this earring form. However, no reference is given to this sculpture.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	Remarks
Tel Michal	Silver	1	Strata XI-VI	6^{th}-4^{th} c.	Muhly and Muhly 1989: fig. 25.10: 195, pl. 71: 195	With large granule at each knee of hoop.
Kamid el-Loz	Silver	1	Grave 4	6^{th}-4^{th} c.	Poppa 1978: pl. 5: 10; Hachmann and Penner 1999: pl. 9: 12	With granule decoration between balls (see Shea and Maxwell-Hyslop 1985: 169).
Lachish	Gold	1	From fill within 'Great Shaft'	6^{th}-5^{th} c.	Tufnell 1953: 160, fig. 15	With wound-wire decoration on the lower portion of hoop and a granule at each knee of hoop (Shea and Maxwell-Hyslop 1979; 1985).
Tell el-Farʽah (S)	Silver	1	Tomb 754	6^{th}-5^{th} c.	Petrie 1930: pl. 48: 573	With granular decoration and a large granule at each knee. From a single-period burial of a child. Suggested redating to 6^{th}-5^{th} c. by Maxwell-Hyslop 1978.
Tel ʽIra	Silver	3	Tomb 23	6^{th} c.	Freud 1999: fig. 8.2: 2-4	Partial. With wound-wire decoration on lower portion of hoop and a granule at each knee.
Jordanian Hoard	Silver	3	From looted hoard	5^{th} c.	Kraay and Moorey 1968: pl. 22: 131, 134, 135	With granular decoration and a large granule at each knee. Excavator's dating. Jewelry pieces are possibly heirlooms from 7^{th}-6^{th} c.
Ketef Hinnom	Silver	1	Tomb 25 repository	7^{th}-5^{th} c.	Barkay 1986: 31	Partial. With wound-wire decoration on the lower portion of hoop and a granule at each knee of hoop.
Tell el-Farʽah (S)	Silver	1	Tomb 725	7^{th}-5^{th} c.	Petrie 1930: pl. 48: 572; Maxwell-Hyslop 1978	Found with fragments of similar earring, possibly a pair. Suggested redating to 6^{th}-5^{th} c. (Maxwell-Hyslop 1978). From a single-period burial.
Busayra	Copper alloy	1	From an unregistered burial	Prob. 8^{th}-5^{th} c.	Sedman 2002: 415, pl. 10.195c	Partial.
Tel ʽIra	Copper alloy with Silver plating	2	Tomb 14	8^{th}-7^{th} c.	Freud 1999: fig. 8.2: 5-6	Partial. With wound-wire decoration on the lower portion of hoop and a granule at each knee. Author's suggested redating-7^{th}-6^{th} c. See n. 164.

Earrings Type II.6c – with Attachment of Solid Granule Cluster and Filigree Wire Decoration (Fig. 11: 18)

A rare variant of Type II.6b, this form with solid granule cluster at bottom has an elongated hoop opening off at one side and bears applied filigree scrolls and wire binding on the lunate and on the lower ends of the hoop. When discovered, one of the examples from Tawilan had three Type I.1 Metal Granule Beads threaded on the hoop (Fig. 11: 18).

Though earrings with Attachment of a Solid Granule Cluster (Type II.6a) are relatively common during the Late Bronze – Iron Age II, examples in which the lunate bears further wound-wire or filigree decoration are uncommon in such an early period, these are usually found later during the Iron Age II as on Type I.3a earrings. A similar decorative arrangement of wires is found on Type VII.2 earrings from Tel Ḥalif, dated to the 8^{th}–7^{th} centuries (see below). Though none of its features are exceptional, the use of extensive wire decoration on a lunate earring is unusual at such an early date.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tawilan	Gold	2	From hoard	10^{th}-9^{th} c.	Ogden 1995: fig. 8.3, 8.4, 8.17, 8.18	---

Earrings Type II.7 – with Ankh-Shaped Form (Fig. 11: 19-20)

This form, termed *'ankh'* earring or *'crux ansata'* (Pisano 1987: 81), consists of a solid metal hoop and lunate, usually elongated, from the bottom of which is attached a 'T' shaped cross, the entire piece with the hoop resembling an *ankh,*[169] a well-known Egyptian sign of a man's girdle tie symbolizing life and known from the 19th Dynasty until Ptolmaic times (Petrie 1914: 14). Though Pisano (1987: 81) asserts that this form begins in the Near East during the 9th century, the examples cited by her are actually various forms of Assyrian-type 'tri-lobed' or 'triple-armed' earrings that bear a generalized resemblance to the *ankh*-form but are of different concept and manufacturing technique.[170]

Though local examples are few, such as an 8th century silver example from Akhziv (Fig. 11: 19), all other examples appear to be directly connected to Phoenician settlement and westward expansion, suggesting that this form be seen as Near Eastern in origin (Pisano 1987: 81), adopted and used by the Phoenicians during the Late Iron Age II and into the early Persian period. Besides the example from Akhziv, other examples are known from northern Phoenicia such as in silver from Tomb 25 at Sarafand, dated to the 8th century (Fig. 11: 20; Culican 1978: fig. 4, 136-138; Saidah 1983: pl. 54: 3). To the west, numerous examples of this form are found primarily during the 7th-5th centuries (see Pisano 1987: 81 for a full listing and references). These are usually made in gold, such as several examples from Tharros with long hoops and wide crosses that widen towards the ends (Pisano 1987: pl. 38: g-h; 44: c-d) and other western Phoenician settlements such as Rachgoun in North Africa (Vuillemot 1965: fig. 28, third row).[171] This form of earring thus appears to have been a Phoenician adaptation of a well-known Egyptian symbol. By the 5th or 4th centuries, this form does not appear in any of the areas affected by Phoenician settlement (Culican 1978: 137) and does not appear as an element in Punic culture.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Silver	1	Tomb ZR XIX	8th c.	Dayagi-Mendels 2002: fig. 4.15: 6	Mixed tomb. Dating according to Dayagi-Mendels.

Earrings Type II.8a – with Attachment of Row of Granules (Fig. 11: 21-24)

Rounded, solid earring hoop with tapering ends, opening at the top or at the side. At the lower portion of the hoop, solid granules are attached at set intervals along the length of the lunate.

The examples from Tawilan (Fig. 11: 23) feature a hoop that opens at the top, a feature typical of Middle and Late Bronze Age hoops but uncommon in the Iron Age when they are generally found to open at the side, such as in the examples from Tell Jemmeh (Fig. 11: 21). The two examples from Tawilan, one of whom is partial, also apparently had a cluster of four solid granules attached to the lower portion of the hoop as in Type II.6a Earrings, flanked by three granules along the hoop at either side. The example from Eshtemoʻa (Fig. 11: 22), though partial, does not appear to have had a granule cluster at the bottom.

This earring form, though not common, is depicted worn by a male on a stone statue from Khirbet el-Hajjar, dated to the 8th-7th centuries (Khairi 1970: pl. 1f; Ibrahim 1971: pl. 1 at bottom). It is also depicted on a female figurine fragment from Tell Jawa (Daviau 2002: 58-59, fig. 2.29: 1) and on a stone male statuette from the Amman citadel (Dornemann 1983: fig. 90: 1); all of whom may be dated to the same time span. The Iron Age IIA date of the Tawilan specimen, along with the 10th century date of the Eshtemoʻa example, suggests that the date of the earrings found in the jewelry hoard from Tell Jemmeh should also be raised to the 10th century and not the 12th century as proposed by Petrie (1928: 10).[172]

An earring from Uruk, associated with the Neo-Babylonian period (Late Iron Age II) features a double row of granules soldered to a central wire (Maxwell-Hyslop 1971: 268, pl. 217) and the same form in gold is found at Sardis in western Asia Minor, dated to the 7th-6th centuries (Densmore Curtis 1925: pl. 7: 9). These are termed 'pennannular earrings' said to be common in northern Syria during the 6th century (Maxwell-Hyslop 1971: 268, pl. 256), in Anatolia during the 5th century (Moorey 1980: fig. 13: 300) and even further east towards the region of Iran (Rehm 1992: abb. 109-119). The presence of this form at En Gedi during the 6th-4th centuries shows that this fashion continued in the southern Levant until the Persian Period as well. In addition, a gold earring from Zinjirli

169 Despite the Egyptian origin of the ankh motif, there is no evidence that this motif was worn as an earring form in Egypt. The name is also spelled as *onkh* (see Petrie 1914: 14).

170 Tri-lobed earrings are a development of the Type II.1b Earrings with Solid Drop-Shaped Attachments, in which the drop or lobe is found cast in conical or trumpet shape along with the hoop (see above Earring Type II.1b and n. 159 and n. 160). Type II.7 earrings represent an ankh shape, either cast in one piece along with the hoop or soldered on to the hoop but the 'T' is formed of a flat piece of thick metal sheet.

171 Another such earring has been noted from Cyprus, though not illustrated (de Ridder 1911: n. 660).

172 This suggestion appears to be corroborated by the other objects found with these earrings, which include Type I.1a earrings and Type I.3b earrings (see above), none of whom have a chronological range earlier than the 11th-10th centuries and a small iron ring (Petrie 1928: pl. 21: 5), generally not common until the 11th century or later.

dated to the 7th century bears granular decoration and a row of rings at the bottom of the lunate (Maxwell-Hyslop 1971: fig. 24c) while a similar gold earring from Sardis bears a row of small granule pendants (Densmore Curtis 1925: pl. 7: 4).

This form is one of the few examples found also in stone molds, indicating a local production. Stone molds of this earring type have been found at Samaria (Reisner, Fisher and Lyon 1924: pl. 68: n), probably datable to the Iron Age and at Tel Beth-Shean (Rowe 1940: pl. 53A: 8), dated to the 13th century.

The two examples from the Morinaga Cave at En Gedi are of annular form. Both the body of the earring and the attached granules are hollow and are formed of sheet-metal. These objects are similar in construction to Type IV Small Hoop Rings (see Fig. 17: 5; Part II, sect. 7.2.4.).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
En-Gedi, Morinaga Cave	Silver?	2	Burial cave	6th-4th c.	Shai, Porath and Eshel 2007: fig. 3: 9, 10	Partial. With hollow spheres.
Lachish	Silver	1	Burial cave 1002	8th c.	Tufnell 1953: pl. 57: 10	Mixed burial cave. Excavator's dating.
Tawilan	Gold	2	From hoard	10th-9th c.	Ogden 1995: 8.20, 8.21	---
Eshtemoʿa	Silver	1	From hoard	10th c.	Yeivin 1990: fig. 16: 11; 20	---
Tell Jemmeh	Gold	2	From hoard?	12th c. (prob. 10th c.	Petrie 1928: fig. 1: 10-11	Excavator's dating. Author's suggestion-10th c. See n. 93 and n. 169.

Earrings Type II.8b – with Attachments of Perpendicular Rows of Granules (Fig. 11: 25-26)

A rounded solid earring hoop with tapering ends, opening at top. At the lower portion of the hoop are attached at set intervals three projecting lines of attached granules, perpendicular to the hoop.

A solitary example of this type is known from the Tawilan hoard (Fig. 11: 25). This assemblage is dated on stylistic grounds of the other jewelry objects within it to the 10th-9th centuries (Ogden 1995). As in the Type II.8a Earrings discussed above, in this form the hoop is also found to open at the top. The specific technique of attaching lines of granules perpendicular to the hoop is rare, though none of the constructional techniques in themselves were foreign to the Iron Age II goldsmith.

An interesting parallel composed of three granule pillars projecting from an annular hoop in gold is known from two gold earrings found in Tomb 5 at Lefkandi in Greece, also dated to the 10th-9th centuries (Fig. 11: 26; Higgins 1980: 221, pl. 220: d, 171: 5.10-5.11, 231: d)[173] and another earring from the same site is of similar form, the granules being replaced by hollow cones made of wire rings (Popham, Touloupa and Sackett 1982: pls. 17: 40-41, 30: b). The uniqueness of the Tawilan and the Lefkandi earrings may suggest some contact between these two regions that may possibly be associated with Phoenician trade (Kardara 1961).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tawilan	Gold	1	From hoard	10th-9th c.	Ogden 1995: figs. 8.22, 8.23	Rare form, Greek parallel.

Earrings Type II.9 – with 'Tassel'[174] Attachment (Fig. 11: 27-34)

These earrings are composed of a solid lunate earring hoop, usually opening at the side[175], thickened at its bottom to which is attached a kind of 'tassel' depicting a calyx of a flower bud or possibly a bunch of dates.

Early examples of this type from the end of the Late Bronze and into the beginning of the Iron Age I, such as those from Saḥab, Timna, Madaba, Deir ʿAin ʿAbata, Cave A4 in the Baqʿah Valley and Tell el-Faraʿh (S) are occasionally solid, though usually hollow. They are composed of an elongated, somewhat tubular attachment, fluted lengthwise and occasionally decorated with wire or granules (Fig. 11: 27, 29-30, 32-33). This portion of the attachment may be capped by a hollow cone made of wire wound in spiral fashion, such as in the Baqʿah Valley ex-

173 After use of this technique had disappeared at the close of the Mycenaean period in Greece, this is one of the first Greek jewelry pieces to appear with granular decoration. The appearance of this form, and with it the revival of the granulation technique, is attributed to the Phoenicians (Kardara 1961; Higgins 1980: 221), who are also held responsible for the spread of tri-lobed or three-armed earring westwards, though this latter form may more likely be attributed to the Neo-Assyrians (see above Earring Type II.7 and n. 159, n. 160).

174 The term was first used by Petrie (1930: 11) in describing the examples from Tell el-Farʿah (S).

175 In two of the examples from Tawilan, the hoop opens at the top, a feature typical primarily in lunate earrings of the Middle and Late Bronze Age,. However, at Tawilan, these two examples are also found alongside of earring hoops that open at the side, indicating a late (though rare) continuation of this older tradition.

amples, or those from Tell el-Faraʻh (S) (Fig. 11: 27, 30-31), which is in turn attached to the earring hoop. The concept of an attachment depicting a closed flower petal begins in the Late Bronze Age, where golden examples are known from Deir el-Balaḥ (Dothan 1979: ills. 158, 164, 171-173), Beth Shemesh (Tadmor and Misch-Brandl 1980) and from Hala Sultan Tekke in Cyprus (Åström et al. 1983: 12, fig. 7). Later developments of this type from the middle of the Iron Age I (11th c.) and into the very beginning of the Iron Age II (10th c.) arecomposed of a cluster of granules arranged in vertical rows or an elongated square, in turn often capped by wire wound in a cone attached to the earring hoop. Outstanding examples of this later development, which does not continue after the 9th c., are found at Ashkelon, Tawilan, Wadi el-Makkuk and in a peculiar, possibly curated example from Tel Aviv (see Fig. 11: 28, 29, 34).

In following the development of this earring form from the Late Bronze Age to the very beginning of the Iron Age II, J. Verduci asserts that the tassel form may have been the appropriation and re-configuration of a local (Late Bronze Age) floral form that was interpreted differently to communicate a new cultural identity (Verduci, pers. comm.). While the development of the form is clear, the limited amount of examples found throughout the southern Levant and at present, their spatial distribution from Tawilan and Timna in the south to Tell el-Farʻah in the north, is difficult to associate with a specific cultural group of the Late Bronze and Iron Age I periods.

The ʻsquareʼ tassel type, such as that from Wadi el-Makkuk, is strikingly similar to a gold example of unclear provenance and date, originating from Greece and now at the Bénaki Museum (claimed to be ʻMyceneanʼ; Lemerle 1938: 448, pl. XLVIII.5). This may indicate further, though admittedly limited, evidence of contacts between the Aegean and the southern Levant, possibly nearing the end of the Iron Age I.

The variety of techniques used in fabrication of all these earrings is testimony to the ingenuity and the ambitiousness of the goldsmiths during this period. In the example from Wadi el-Makkuk (Fig. 11: 28), the tassel is attached to the hoop by means of a solid cylindrical stem[176], while in the examples from Tawilan (Fig. 11: 34), the attachment of the tassel is by means of a hollow conical device made of tightly wound-wire coil[177], at times decorated with pyramids of granules. Different techniques are employed for the construction of the tassel itself. In the Makkuk example, a square shape is achieved by the composition of five vertical cords of granules soldered together, one in the center and four around it, each composed of three strands of granules soldered together and attached at the top to a small square platelet (Sass 2002: 22-23). The Tawilan examples are of different constructional technique, but a similar effect was achieved (Ogden 1995: 69-71). In two of these, the tassel is formed by a corrugated sheet of gold in the form of a cylinder, attached to the coiled wire cone by a circular gold plate. Gold granules are placed side by side in a vertical row within each of the ʻgulliesʼ of the corrugated cylinder. Microscopic examination of these pieces reveals that the grains were soldered along the corrugations before the sheet was bent and soldered into cylindrical shape (Ogden 1995: 69). The ridges of the corrugated gold sheet on one of these earrings also appear to have been worked from behind with a blunt round punch in order to reproduce a granulated effect next to the granules themselves. Another tassel earring from Tawilan is of even more elaborate and complex construction, the cylinder of the tassel formed by vertical lines of granules built up of individual triangular ʻrodsʼ of grains soldered together and then bent into cylinder form.

Several of the earrings from Tell el-Farʻah (S) (see Maxwell-Hyslop 1971: 225-226) are of identical construction to those from the Tawilan hoard, but some are of slightly different technique (see Platt 1972: 137ff.; Webb 1986: 29-34; Ogden 1995: 70-71 on to the fabrication technique of these earrings).[178] The earring from Tomb 518 (Fig. 11: 30) has alternating straight and wavy lengths of vertical wire soldered onto a sheet-gold cylinder. The earring from Tomb 222 (Fig. 11: 29) has a cylinder made of flat, not corrugated gold sheet, onto which were soldered gold strips with a notched or beaded design along their lengths, produced by hammering the gold strips onto a line of small depressions on a copper alloy block. Alongside the gold strips, lines of small round dents applied by a small dome-ended punch accentuated the tassel effect on the sheet-gold cylinder. Webb has suggested that this particular earring, along with that recovered from Tomb 605, was produced by lost wax casting (1986: 32-34) though this claim appears doubtful as all other forms of this type were produced otherwise.

The various constructional variations among the different earrings from Wadi el-Makkuk, Tawilan and Tell el-Farʻah could be interpreted as the output of several separate, possibly contemporaneous workshops. However, a basic analysis of the gold alloy used in the four Tawilan earrings indicates that they were made from the same batch of alloyed gold, pointing to one workshop as the likely factory for most if not all of the Tawilan tassel earrings. While bearing a strong similarity to its counterparts at Tell el-Farʻah (S), Tawilan and Wadi el-Makkuk, the copper alloy earring from Timna, does not appear to have been decorated by wire and granules. Metallurgical anal-

[176] For a detailed description concerning the construction of this earring, see Sass 2002: 22-23.
[177] Use of this technique, especially in earrings, continues throughout the Iron Age II, as for example in Type II.1a earrings (see above).
[178] Despite the presence of Philistine pottery in the Tell el-Farʻah (S) tombs where some of these earrings were found, there is no evidence so far to connect them to Philistine craftsmanship.

ysis of the Timna piece has shown the join between the attachment and the earring hoop to be executed using a gold-based solder (Rothenberg 1988: 149, 181-182).

Though Type II.9 Earrings are associated with the Iron Age I – early Iron Age II, a female plaque figurine from Tell Batash, dated to the 8th century, shows some kind of elongated attachment or pendant earrings (Mazar and Panitz-Cohen 2001: pl. 30: 1). This representation may depict Type II.9 Tassel Earrings or possibly Type III.2 Earrings (see below).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Aviv, esh-Sheikh Munis	Electrum	1	Tomb 19	19th-20th c. CE	Dayan, Ajami and Nagar 2012: fig. 7	From an Ottoman burial, Possibly found and curated from nearby Tel Qasile. Solid.
Tell el-Farʽah (S)	Gold	1	Tomb 241	10th-9th c.	Petrie 1930: pl. 43: 514	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443. Hollow.
Tel Ashqelon	Gold	1	Unclear	10th c.	King and Stager 2001: Ill. 155	Hollow.
Wadi Fidan	Copper alloy	2	Grave 371	11th-9th c.	Levy et al. 2005: 468, fig. 31	Poor photo. Hollow.
Tawilan	Gold	4	From hoard	11th-9th c.	Ogden 1995: 69-72, 277, fig. 8.6-8.15	Metallurgical analysis. Hollow.
Wadi el-Makkuk	Gold/ Electrum	1	From hoard	11th-10th c.	Sass 2002: 22-24, fig. 2	Metallurgical analysis. Hollow.
Tell el-Farʽah (S)	Gold	1	Tomb 222	11th-10th c.	Petrie 1930: pl. 33: 368	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443. Hollow.
Tell el-Farʽah (S)	Gold	1	Tomb 518	11th c.	Petrie 1930: pl. 33: 384	From a single-period burial. Dating according to Laemmel 2003: Table 2. Hollow.
Tell el-Farʽah (S)	Gold	1	Tomb 605	11th c.	Petrie 1930: pl. 33: 381	From a single-period burial. Dating according to Laemmel 2003: Table 3. Hollow.
Tell el-Farʽah (S)	Gold	1	Tomb 647	11th c.	Petrie 1930: pl. 33: 345; 36	From a single-period burial. Dating according to Laemmel 2003: Table 3. Hollow.
Cave A4, Baqʽah Valley	Copper alloy	1	Cave A4	12th-11th c.	McGovern 1986: fig. 85: 17, 18	McGovern 1986: fig. 85: 18 represents two fragments consisting of a conical-shaped spiral-wound wire attached to an earring hoop. Hollow.
Deir ʻAin ʻAbata	Copper alloy	1	Cairn Tomb J.XV	13th-11th c.	Tubb 2011: fig. 128	Excavator's dating. Mixed tomb. Hollow.
Madaba	Copper alloy(?)	2	Tomb	13th-11th c.	Harding 1953: pl. 32: 197, 198; pl. 5: 41	Uncleaned examples, possibly silver. Excavator's dating. Solid.
Timna	Copper alloy	1	From temple	13th-11th c.	Rothenberg 1988: 149, no. 38; 181-182, fig. 55: 15	Hoop and attachment joined by gold-based solder. Hollow.
Saḥab	Copper alloy		Tomb C	14th-9th c.	Dajani 1970: pl. 20: SA 366, SA 367, SA 363	From mixed tomb. Probably 12th-11th c. Solid.

7.1.3. Earrings Type III – Solid Lunate with Pendant

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
III.1a	with Hollow Lotus Pendant	Late Iron Age II	Uncommon, Phoenician type	Fig. 12: 1
III.1b	with Solid Lotus Pendant	LB	Uncommon	---
III.2	with Basket Pendant	Iron Age II – Persian	Common, Phoenician type	Fig. 12: 2-8

III.2a	with Prototype(?) of Basket Pendant	Late Iron Age I – Early Iron Age II	Prototype of Type III.2?	Fig. 13: 1-4
III.3	with Ribbed Drop-Shaped Pendant	LB II-Iron Age I	Uncommon	---
III.4	with Twisted Wire Pendant	Late Iron Age II	Uncommon, Phoenician type	Fig. 13: 5-6
III.5	with Cylindrical Paste Pendant	LB	Uncommon	---

Earrings Type III.1a – with Hollow Lotus Pendant (Fig. 12: 1)

An earring(?) pendant in the shape of a partly open lotus flower, made of two identical impressed sheet-silver pieces soldered together and fitted with a suspension ring on the top (see below, Type IV Composite Earrings for a similar motif used as an attachment in a composite earring).

The present example from Tel Miqne-Ekron is unique, and may only be compared to four identical silver specimens from the necropolis of Amathus, Tomb 159 (Laffineur 1992: pl. 9: T.159/56), a similarly fashioned earring pendant in silver from the Djebila necropolis in the vicinity of Tangier (Ponsich 1967: fig. 61, pl. 43), both dated to the 7th-6th centuries and another silver ornament, possibly hollow, from Tomb 25 at Sarafand dated to the 8th century (Culican 1978: fig. 7). Use of the lotus flower as an earring pendant is found during the 15th-14th centuries of the Late Bronze Age, such as on two earrings of copper alloy from Lachish, in which a stylized lotus flower is made of two wires splitting off from the base of the hoop (Type III.1b Earrings; Tufnell 1958: pl. 25: 31, 44).[179]

Lotus-flower beads of faience or Egyptian blue, stamped gold lotus pendants and plaques abound in the southern Levant during the Late Bronze and Iron Ages and are common in the Phoenician world, though usually not as components of earrings. Small gold lotus pendants were found at Grave 1073 at Tell el-ʿAjjul, dated to the 15th century (Petrie 1932: pl. 1; Maxwell-Hyslop 1971: 126, fig. 91). As an amulet, the lotus flower was not popular in Egypt but Phoenician examples from sites such as Tharros, Carthage, Utica and Ruvo (Etruscan) are very common, all dating to the 6th-5th centuries (Pisano 1987: 112). The lotus flower, native to Egypt, was the plant of the Egyptian deity Nefertum, and from the time of the Old Kingdom it was the symbol of regeneration. The motif was widely employed throughout the ancient Near East, Phoenicia and the Phoenician West.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	1	Stratum IB	7th c.	Golani 1996a: 32-33, fig. 7: 1; Golani and Sass 1998: 65, 67, fig. 11: 1	Pendant only. From sealed context.

Earrings Type III.2 – with Basket Pendant (Fig. 12: 2-8)

Basket-shaped earring pendants,[180] commonly made of silver, less often in gold or copper alloy, consist of a solid-cast, or hollow cube, with two parabolic wire handles springing crosswise from its upper corners. On top of the handles is attached a small suspension ring, hanging from another suspension ring attached to a wire earring hoop, slightly thickened at its bottom. In the more common solid cube examples, a small pyramid of granules is found upon the cube and below the handles. This pyramid is often missing and in some examples, may have simply broken off (Fig. 12: 2).

Examples of this pendant are well-known in various forms from the 7th-5th centuries at sites commonly associated with the Phoenician culture throughout the Mediterranean basin. Thus, scholars have regarded it as a purely Phoenician phenomenon (Culican 1958: 94; Golani 2010).

Compared to the number of examples known from the western Mediterranean and Cyprus, relatively few specimens are found in the Phoenician homeland of northern Israel and the Lebanese coastal plain,[181] where this pendant appears primarily from the very end of the 8th through the beginning of the 7th century. A silver example was found at Sarafand, Tomb 20, dated to the end of the 8th–7th centuries (Culican 1978: 138, fig. 5) and silver and copper alloy pendants are known from the Akhziv necropolis, with a chronological range that is also probably to be associated with the 8th-6th centuries (see below). Several gold examples are reported from Tarsus, within an

[179] Another example of a lotus pendant made of blue composition and hung by a silver wire, possibly associated with an earring, is known from Tomb 24 at ʿAtlit, dated to the 5th-4th centuries (Johns 1933: pl. 33: 876).

[180] Though the term 'basket pendant' is the most common, the literature also includes other names for this form. The earlier terminology of "ball and cage" (Myres 1914: 381) is more commonly supplanted by the term "basket pendants" (e.g., Pisano 1987: 78). The French term is "pendant en forme de boisseau" (Quillard 1979: 50). The Italian term is "pendante a forma di cestello" (Becatti 1955: 172, n. 220).

[181] The reason for this is somewhat of an optical illusion: most elements of Phoenician material culture are known outside of Phoenicia, where more and larger excavations have taken place, than from the area of Phoenicia itself (northern Israel and Lebanon).

anthropoid sarcophagus dated to the 5th century (de Ridder 1911: 119, nos. 658-659, pl.1: 2), though these may very well have been heirlooms (Culican 1958: 94).

Outside the southern Levant and Phoenicia, numerous such pendants are found at sites commonly associated with the Phoenician westward expansion and colonization (see Quillard 1979: 50-54; Pisano 1987: 79 for a complete listing and bibliography). These include Kourion (Fig. 12: 4) and Amathus in Cyprus, Rhodes, the necropolises of Douimes and Dermech of Carthage (Fig. 12: 5), Les Andalouses-Lindles in Algeria, several necropoli near Tangier in Morocco, Motya and Palermo in Sicily, and Tharros in Sardinia (Fig. 12: 6). Recently, several gold examples have been published from Cadiz in Spain (Perdigones Moreno *et al.* 1990: figs. 34, 36: 1, 37: 2, pls. 9, 11-12, 14: 1), dated to the 6th-4th centuries and a golden pendant is known from the site of La Fonteta, dated to the late 8th-6th centuries (González Prats, Garcia Menárguez and Ruis Segura 2002: fig. 17). A silver variant known only in Cyprus consists of a solid, fluted cube depicting a cage(?) surmounted by a small pyramidal structure (Fig. 12: 7). Examples are known from Limassol, Tomb 186 at Ayios Nicolaos, dated to the 5th century (Karageorghis 1984: 910-911, fig. 58a) and Larnaca (near Amathus), Tomb 10 at Ayios Georghios, dated to the 7th-5th centuries (Karageorghis 1989: 793-794, fig. 14).

The geographic distribution of the available examples, ranging from the Phoenician homeland in the east and throughout the regions affected by the Phoenician westward expansion and settlement in the 7th-6th centuries, serves to anchor the cultural attribution of this pendant type. Though prototypes of this form date to the late Iron Age I-early Iron Age II, these are found only at Tel Beth-Shean, Tel Beth-Shemesh, Tell el-Farʿah (S), Kadesh Barnea, Lachish, Madaba and Tel Miqne-Ekron (see below Type III.2a Earrings; Fig. 13: 1-4). The flowering of this pendant coincides with the main wave of Phoenician westward expansion in the 7th century; its popularity appears to diminish in the 6th to early 5th centuries. The 6th century cemeteries of Nora and Cagliari in Sardinia have no such examples and while a few early 5th century examples are known, such as from Tarsus, these may more probably be seen as heirlooms. The development of the western Punic culture after the initial period of Phoenician westward expansion and settlement in the 7th-6th centuries may explain the general lack of such pendants from the 5th century onwards.

An aforementioned female plaque figurine from Tel Batash, dated to the 8th century (see discussion in Type II.9 Earrings, see above 7.1.2.), is shown wearing two elongated earrings ending in what may be a cube or a box (Mazar and Panitz-Cohen 2001: pl. 30: 1). This depiction may represent Type III.2 Basket Pendant Earrings or Type II.9 Tassel Earrings (see above). However, the chronological range of the latter type appears to end much before the 8th century.

Most suggestions as to the significance of basket pendants are purely speculative and are expressed within their terminology, based on the common, cognitive association that the form of the pendant raises. The term 'ball and cage' (Myres 1914: 381) saw in these pendants a small object or ball (the small lump or pyramid of granules) ensconced within the parabolic wires above the cube (the cage). This term may have also been inspired by the peculiar, fluted appearance of the lower cube as a cage with bars, a form that has so far been found only among some of the Cypriot examples. Similarly, the term 'basket' defines a square container with handles that holds some kind of commodity, such as a bushel of grain or a full measure of corn. This may be a symbolic depiction for successful crops or plenty as suggested by Quillard (1979: 50). The shape of the pendant may also be seen to resemble a lantern; the pyramid of granules may be a schematic depiction of a light or flame issuing from the cubic receptacle, held and transported by the arching handles. The form of this object could also represent a receptacle for incense; incense burners of similar shape are known from the Roman-Byzantine period (Zori 1992: 221).

The regularity and relatively constant design of these jewelry pendants wherever they are found, naturally suggest that they had a symbolic significance. The constant recurrence of this pendant, whether separately or with other pendants such as hawks, Hathor heads, lotus flowers and palmettes (see below, Type IV Earrings; Fig. 13: 7-9), underlines its symbolic, possibly cultic importance. Basket pendants appear to have been a miniature, schematic representation of another object, but there is no well-known motif or object that may clarify its meaning. The shape may suggest a lantern or a basket holding some commodity, such as a bushel of grain or a full measure of corn, signifying a successful crop. A portable shrine has also been suggested.[182]

[182] Five rather unique artifacts, only one of which derives from a datable stratigraphic context, may possibly illuminate the significance of basket pendants. Two of these are bronze objects acquired years ago in Syria, one of which is alleged to come from the region of Beirut in Phoenicia (Seyrig 1959). These show a remarkable resemblance to basket pendants and they are possibly to be seen as representing portable shrines (Seyrig 1959: 43-48). The best preserved of these two objects stands 14 cms high, 6 cms long and is 5.3 cm wide, while the other is partially preserved and slightly smaller, standing 9.5 cms (Fig. 12: 10). Both are fashioned in the 'lost wax' method and are composed of a hollow box, standing upon four sculpted hooves at each corner. A round ring, evidence that these objects were to be transported or hung, caps two arched handles rising from the corners of the box. One of the reliquaries has a standing figurine of a marching deity upon a small pedestal underneath the handles, while the other exhibits a bull within the box. The deity bears a high conical hat and is highly reminiscent of well-known depictions of the Canaanite gods 'Baʿal' or 'Resheph' (see Negbi 1976; Cornelius 2004). The sides of each box exhibit several cultic symbols such as a bull's head, the sun within horns of a bull, the moon and a serpent. These

All interpretations of basket pendants agree as to the portability of the original, full-sized object. As most examples feature a pyramid of granules or other protrusion on top of the cube, it is this structure that may provide the key to understanding the meaning of the pendant. If seen as a portable shrine, the pendant, rather than holding a heap of grain, may represent a Phoenician standing stone, or *betyl* (Moscati 1968: 39-40). Unfortunately, there is no other tangible evidence and no well-known motif or cultic symbol of Phoenician or other culture that would clarify its meaning. As the first appearance of such a pendant in the late Iron Age I is local (see below Type III.2a Earrings), its symbolic significance should be sought among the local cultural elements of the Iron Age. By the time of the development of the western Punic culture from the 5th century onwards, the meaning or importance of this form, well-known primarily to the Phoenician colonists of the 7th-6th centuries, may have been lost.[183]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	6	Stratum IB	7th c.	Golani and Sass 1998: 63, 67-68, fig. 11: 2-3	From sealed contexts.
Tel Miqne-Ekron	Silver	1	Stratum IB-C	7th c.	Golani forthcoming A	---
Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR XXI	7th-6th c.	Dayagi-Mendels 2002: fig. 4.4.16: 1	Corroded. Dating according to Dayagi-Mendels.
Akhziv (er-Ras Cemetery)	Silver	1	Tomb ZR XII	8th-5th c.	Dayagi-Mendels 2002: fig. 4.10: 17	Partial. Mixed tomb. Dating according to Dayagi-Mendels.

symbols are executed in relief on the object bearing the standing god and are engraved on the one with the bull. Both objects appear to represent a portable shrine or altar bearing cultic elements, such as the storm god and recumbent bull that are diagnostic of the local Canaanite culture. Other decorative elements on the reliquaries, such as the bull's head on a stand and the sun between bull's horns appear to represent Aramean cultic symbols (Krebernick and Seidl 1997: 106-109). These are known from several stelae in Anatolia, Syria and northern Israel and are evidence of a Syro-Mesopotamian influence that is known to have penetrated into northern Israel (Bernett and Keel 1998).

The third object is of unknown provenance, presently found at Lieden (Krebernick and Seidl 1997: 106-107, pl. 4b). This item is of similar form and shape to the two Syrian bronzes published by Seyrig but is missing the arched handles. On top of the cube are two standing deities, male and female, while the sides of the box are decorated with winged sphinxes.

The fourth object, whose present location is unknown, comes from the antiquities market and was allegedly found in the region of Kfar Kanna in the lower Galilee (Seeden 1980: 110, pl. 103: 1726). This object consists of a cube, at the four corners of which are standing deities with slightly conical hats. The two arched handles above the cube are missing, but may have emanated from the heads of the four deities around the cube. On top of the cube is a bronze figurine of a goddess with one arm raised, wearing a large Egyptianizing crown and three horns on the forehead, similar to a 7th century clay head of a deity found at Horvat Qitmit (Beck 1995: fig. 3.53-3.55). The total height of this piece is about nine cms.

Even more suggestive is the fifth object recently found in the renewed excavations at Tel Beth-Shean, directed by A. Mazar of the Hebrew University and attributed to an 12th century stratum at the site (Yahalom-Mack 2009). Made of copper alloy, this object depicts a flat square platform or shallow box, from the four corners of which are depicted ropes for suspension of the platform, ending at the top in a small ring. On top of the platform is a recumbent small bull or calf. The depiction of the 'handles' as ropes may indicate that this artifact is a representation of another object made of perishable materials (such as rope and possibly wood for the platform) of which no examples are known. This object appears to have represented a portable shrine upon which a deity of a calf or bull was carried, similar to one of the objects that Seyrig has published.

The suggestion that basket pendants are miniature representations of a portable shrine now appears to be feasible. Some portions of this shrine would have probably been made of perishable materials, of which the five objects cited above appear to represent. Such a shrine was apparently known during the Iron Age I (12th-10th centuries) and was rooted in the local culture from which the Phoenicians developed. This 'shrine' may be an example of an object that was adopted by the Phoenicians and worn by them in miniature representative form, possibly as a kind of amulet that conferred protection through its association with the sacred shrine.

Several more objects may provide some further illumination as to the origins of this intriguing shrine. Possible connections may be drawn to the numerous ceramic cultic stands unearthed in the Iron Age I repository pit at Yavneh (Kletter, Ziffer and Zwickel 2010) that appear to have been commonplace objects in the local cult. Another rectangular box-like ceramic object, open at the top with five schematic depictions of bulls heads modeled in clay and arranged protruding along the rim has recently been unearthed at Tell Pella in Jordan, in a context dated to the 10th century (S. Bourke, pers. comm.). Soot marks within the box indicate that something was burned inside. Though no indications of handles or any form of attachment for handles or ropes are on this artifact or on the Yavneh cult stands, it is not inconceivable that it could have been a portable shrine of which the abovementioned examples may have represented. Other ceramic objects of similar form to the Pella artifact occur in earlier periods. At the site of Mumbaqa in Northern Syria, several such rectangular ceramic boxes were found dating to the Middle Bronze – Late Bronze Ages. Some of these were divided into two compartments and bore a plastic decoration of a snake on the side of the box while others bore small figures of an embracing couple schematically modeled in clay and arranged protruding along the rim (Czichon and Werner 2008: pl. 273: 8684, 8685, 8687). A similar object, dated to the LB II period has recently been revealed during excavations at Tell Bazi in Syria (B. Einwag, pers. comm.)

183 An unusual and rare development of the basket pendant is found in two pairs of earrings, unfortunately of unknown provenance now found in Berlin (Fig. 12: 8; Culican 1978: 32-33, pl. I: A-B). These consist of a hollow basket pendant with a pyramid of granules hanging down from the bottom of the box as well as an upright pyramid on top. The sides of the cube depict embossed faces. Stylistic considerations have led Culican to consider these basket pendants as late (4th -3rd centuries) Etruscan imitations of Punic forms (Culican 1978: 33) though no examples of such pendants are known from any Punic contexts.

Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR IV	10^{th}-7^{th} c.	Dayagi-Mendels 2002: 43 (not depicted)	Partial. Mixed tomb. Dating according to Dayagi-Mendels.
Tell el-Farʿah (S)	Silver	1	Tomb 201	10^{th} –8^{th} c.	Petrie 1930: pl. 41: 275	Partial. Mixed tomb. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.

Earrings Type III.2a – with Prototype(?) of Basket Pendant (Fig. 13: 1-4)

A possible prototype of the basket earring pendant may be found in the Late Iron Age I and early Iron Age II. Their small size, specialized form and construction, often in precious metal, strongly suggests that they were hung as some form of pendant, but only the example from Madaba, though heavily corroded, retains a suspension hoop at top.

Two of these objects originate from Tel Beth-Shean and were found in the southern Temple, in the lower level of Northern Storeroom 1022. One of these is made of silver in the shape of a hollow lidless box within which a scaraboid dated to the 11^{th}-9^{th} centuries was found (Fig. 13: 1; Rowe 1940: pl. 36: 7). This piece is in the shape of a hollow lidless box, while later basket pendants (see above) are either hollow closed boxes or solid cubes. The second object from Tel Beth-Shean is similar in general shape and is made of a small carnelian cube pierced at four of its corners by copper alloy wires forming two parabolic, intersecting arches above a 'small pebble bead' (Fig. 13: 2). A somewhat similar object consisting of a limestone cube with a triangular bronze wire mount is known from Lachish and another from Tel Miqne-Ekron (Fig. 13: 3), is made of a human molar ground down on two opposing sides and slightly beveled around the edges, with four holes drilled through. Remains of copper alloy wire, possibly the handles of the 'basket', are still evident within the holes. Another example from Madaba consists of a square piece of limestone pierced with four holes through which are passed the ends of two wire loops, the ends bent over towards the center on the other side of the stone.[184] Another small basket made of gold, also in the shape of a hollow lidless box, originates from Tomb 229 at Tell el-Farʿah (S) (Fig. 13: 4). The object from Kadesh Barnea (mistakenly identified as a gaming piece) is dated to the second half of the 8^{th} century, but could have also originated from earlier strata. This item is made of limestone cut in the shape of a flat cube, with two incised bands and an incised ring and dot motif around its narrow sides. A drilled hole with remains of metal wire is found on one of the wide flat sides. The item from Tel Beth-Shemesh is of unclear context and date and is composed of a small square copper alloy plate, pierced at four of its corners by thin wires forming two intersecting parabolic curves.

The chronological span of these objects is from the end of the Iron Age I into the early Iron Age II. Their distinctive form is unknown outside the southern Levant before the late Iron Age I. Its origin is therefore probably local and may possibly be associated with the indigenous cultures of this region.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Kadesh Barnea	Limestone and Copper alloy(?)	1	Stratum 3a-b	8^{th} c.	Gera 2007: 226, fig. 13.4: 6; pl. 13.4: 6	---
Lachish	Limestone and Copper alloy	1	Tomb 218	10^{th}-9^{th} c.	Tufnell 1953: pl. 67: 130	Partial. Excavator's dating.
Tell el-Farʿah (S)	Gold	1	Tomb 229	10^{th}-9^{th} c.	Petrie 1930: pl. 39: 452; pl. 36	Partial. Hollow pendant. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Beth-Shean	Carnelian and Copper alloy wire	1	Level V,	11^{th} c.	Rowe 1940: pl. 30: 46	Pendant only. From southern temple. UM reg. no. 29-104-295.
Tel Beth-Shean	Silver	1	Level V	11^{th} c.	Rowe 1940: 28, 73, pls.30: 47, 66A: 4	Pendant only. From southern temple. With a scaraboid within the box.
Tel Miqne-Ekron	Tooth (?) and Copper alloy wire	1	Stratum IVA2	11^{th}-10^{th} c.	Golani forthcoming A	Partial.
Madaba	Limestone and Copper alloy wire	1	From disturbed tomb	13^{th}-11^{th} c.	Harding 1953: pl. 5: 208	Complete and corroded. Excavator's date.

[184] Harding (1953) also mentions another with glass in place of the stone, which disintegrated. Though this tomb is dated to the 13^{th}-11^{th} centuries, the available parallels may suggest a more restricted range to the 11^{th} century for this tomb, if not later.

Tel Beth-Shemesh	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-741

Earrings Type III.4 – with Twisted Wire Pendant (Fig. 13: 5-6)

A simple earring pendant consisting of a wire bent 180º to form a loop at one end and twisted at the other end.

Only one example of this form is known from Akhziv (Fig. 13: 5), and were it not for several complete gold examples found in Tomb 23 at Tharros (Fig. 13: 6; Pisano 1987: Type VF, p. 82, pl. 119: a.23/6-7) that were hung from a thin rounded hoop, one would not necessarily identify this singular object from Akhziv as an earring pendant. They appear to have been common at Tharros as well as at other sites throughout the Phoenician west and Cyprus (see Pisano 1987: 82 for listing and references) with a chronological range between the 6^{th}-3^{rd} centuries. Their finding at Akhziv in addition to later examples from the Phoenician west, strongly suggests that this form and technique be attributed to the Phoenicians.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv (er-Ras Cemetery)	Silver	1	Tomb ZR XVII	10^{th}-6^{th} c.	Dayagi-Mendels 2002: fig. 4.14: 27	Partial. Mixed tomb, probably from last burial phase. Dating according to Dayagi-Mendels.
Akhziv cemetery	Copper alloy	1	Tomb 24	Generally dated to the 'Iron Age'	Unpublished	Partial. IAA reg. no. 48-516/1

7.1.4. Earrings Type IV – Composite

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
IV	with Attachment and Pendant	Locally and in the Phoenician west – Late Iron Age II	Uncommon, Phoenician type.	Fig. 13: 7-9

Earrings Type IV – with Attachment and Pendant (Fig. 13: 7-9)

Only one local example of such an earring is known from Tel Miqne-Ekron (Fig. 13: 7). The upper portion of this earring consists of a simple hoop to which is soldered a hollow sheet-silver lotus flower attachment. The impressed obverse depicts a partly open flower similar to that described in Type III.1 Earrings (see above), with a human face at the base of the petals; the reverse side is flat and plain, like the palmette pendants from Deir el-Balaḥ of the Late Bronze Age (Dothan 1979: 80). The attachment is perpendicular to the hoop and, assuming that when worn the reverse side was facing the neck, it is the open part of the hoop that is visible from the front. From two small suspension rings soldered to the lower corners of the flower and fitted with their own suspension rings, hang a pair of hollow basket pendants. This earring merges several typically Phoenician jewelry motifs, the partly open lotus flower, the Egyptian-style face and the basket pendants into one well-crafted piece

Though not common, the merging of several constructional elements together in one piece is known primarily from the Phoenician West and is a vivid testimony to innovativeness of the Phoenician jewelers. Among others, these include a gold basket and palmette earring from Cyprus, of unknown provenance, dated to the 7^{th}-6^{th} centuries (Pierides 1971: 27, pl. 14: 6), two gold and one carnelian acorn suspended from a gold lotus flower, in turn suspended from a lunate earring dated to the 6^{th}-5^{th} centuries from Cyprus (Karageorghis 2000: fig. 315), a gold hawk and basket earring from Tharros, Tomb 6, of the same date (Fig. 13: 8; Pisano 1987: pl. 38: b; Moscati 1988: 384) and two contemporary pieces with Hathor head and palmette along with basket pendants in gold at Cadiz, Tombs 2 and 18 (Fig. 13: 9; Perdigones Moreno *et al.* 1990: figs. 34, 37: 2, pls. 9, 12).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	1	Stratum IB	7^{th} c.	Golani and Sass 1998: 63, 67-68, fig. 11: 4	From sealed context.

7.1.5. Earrings Type V – Annular with Truncated Ends

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
V.1	Stone	LB – Iron Age I	Common	---
V.2	Metal	LB	Common	---
V.3	Siliceous Material	LB	Uncommon	---

7.1.6. Earrings Type VI – Earplugs

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
VI.1	Conical or Mushroom-Shaped	LB – Iron Age II	Uncommon	Fig. 15: 1-5

Earrings Type VI – Earplug (Fig. 14: 1-5)

Earplugs are squat mushroom- or disk-shaped objects resembling a conical spool that were made to function as an ornament inserted within the earlobe. Earplugs were a favorite ornament in Egypt, primarily during the 18th-20th Dynasties when they were made of stone, faience and ivory (Petrie 1927: 22-23, pl. 17: 37-57; Dothan 1998; 2003) and reel-like objects of gold, possibly to be interpreted as earplugs and dated to the 7th-6th centuries are also known from Cyprus (Gjerstad 1948: fig. 36: 27) and from Sardis in western Asia Minor (Densmore Curtis 1925: pl. 8: 5-6), suggesting that this fashion may have been adopted by the Phoenicians as well. Such items are used for decoration of the ear in tribal societies of east Africa to this day (Fedders and Salvadori 1979: 107) and are worn within a large cut-out opening in the earlobe. However, the function of such objects found in archaeological contexts was for many years unclear until mummies with very large holes in their earlobes were uncovered in Egypt (Winlock 1942: 111, pl. 87).

All the examples from Tel Miqne-Ekron are clearly of Egyptian inspiration and may be paralleled to similar objects of the 20th to 21st Dynasties found in Egypt (Aldred 1971: pls. 67-68; Bovarski, Doll and Freed 1982: 232; Eaton-Krauss 1982: 232-233). The ivory earplugs from Tel Miqne-Ekron are of mushroom shape, resembling a conical spool that is well-worn and lacks any incised decoration (Fig. 14: 1). Similar earplugs in ivory and alabaster are known from Egypt, dating to the time of the Egyptian New Kingdom (Bovarski, Doll and Freed 1982: 232-233; el-Saady 1996). The faience earplug from Tel Miqne-Ekron is of a squat spool shape with two convex faces (Fig. 14: 2). One side is decorated with a rosette pattern in *ajjuré* style[185] surrounded by two concentric circles while the other side is largely missing but retains some traces of an incised decoration. The *ajjuré* style of decoration in faience is known already from the Egyptian Second Intermediate period (Bovarski, Doll and Freed 1982: 232) and becomes more popular during the New Kingdom (Aldred 1971: pls. 67-68). Locally, this mode of decoration is very rare.

The example from Tel Beth-Shemesh (Fig. 14: 3), appearing as a lentoid-shaped object with a deep gutter around the circumference, is made of blue-colored siliceous material, though it is unclear from the publication whether this was faience or Egyptian Blue. Grant identifies this object as a ‘blue bead’ though no indication is given for the presence of a perforation. The examples from Tel Beth-Shean, associated to the 'Egyptian Garrison' are relatively small and have two undecorated and flat ends.

The examples from Megiddo and Gezer (Fig. 14: 4-5) are mushroom-shaped with one flat and one convex side. The excavators of Megiddo describe this object as an ‘ear stud’, though it is also likely to be interpreted as a gaming piece.[186]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Megiddo	Faience	1	Stratum III	8th–7th c.	Lamon and Shipton 1939: pl. 101: 14	Identified as an ‘ear stud’. Excavator’s dating.
Tel Miqne-Ekron	Ivory	2	Stratum IVA-B	11th–10th c.	Dothan 1998, 2003	---
Tel Miqne-Ekron	Faience with blue glaze	1	Stratum IVA-B	11th–10th c.	Dothan 1998, 2003	Elaborate decoration.
Tel Beth-Shemesh	Faience or Egyptian Blue	1	Tomb I	14th-11th c.	Grant 1927: 187: 812	Mixed tomb that included Philistine Bichrome ware. Excavator’s dating.
Tel Beth-Shean	Faience with light blue glaze	1	Level VII	13th c.	Unpublished	Similar yet not identical. UM reg. nos. 29-105-560, 29-105-561.
Lachish	Ivory	1	Unstratified	Unclear	Sass 2004: fig. 28.17: 3	Assumed to date to the Bronze Age.

[185] *Ajjuré* is a decorative technique of pierced openwork whereby a design is produced by cutting out portions of the work in order to highlight others. In working with faience, a negative pattern is produced on a mold, or the pattern may be cut from the faience itself prior to its firing when it was still in a plastic state.

[186] Objects of similar shape and size made of stone and terracotta have been found at Gezer (Macalister 1912c: fig. 281b), dated to the Fourth Semitic period, and from tombs at Tell el-Farʿah (S) (Petrie 1930: pls. 30: 135, 32: 174, 34: 200). As the use of heavier stone and terracotta appears unlikely in the construction of ear ornaments, the interpretation of these ‘ear studs’ as gaming pieces appears more reasonable.

7.1.7. Earrings Type VII – Hollow Lunate

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
VII.1	Plain Hollow Lunate	Iron Age II – Persian	Common	Fig. 14: 6-11
VII.2	Decorated Hollow Lunate,	Iron Age II – Persian	Uncommon	Fig. 14: 12-13
VII.3	Plain Hollow Lunate, Short Hoop Opening at Top	MB II – LB	Uncommon	---

Earrings Type VII.1 – Plain Hollow Lunate (Fig. 14: 6-11)

Undecorated hollow lunate earrings, usually found with an elongated hoop. Such earrings may be made by preparing two identical half-crescents on a doming block and then joining them together, then adding a wire hoop to the end of the crescent. Another manufacturing method identified at Eshtemoʿa, entails cutting out a club-shaped piece of sheet-metal, folding the corners of the wide end inwards in a rounded manner, and then using the elongated remainder in order to fashion the extended hoop (see Fig. 14: 8). This manufacturing method results in a nearly solid lunate. The technique may also be identified in several silver earrings from an unpublished hoard of silver jewelry and silver scrap found at Ein Hofez, located near Yoqneam (Y. Alexandre, pers. comm.). Such earrings may be made of silver, gold or copper alloy.

Use of sheet-metal in the production of earrings goes back to the end of the Middle Bronze II period, such as at Tomb 18 in the Tel Aviv Harbor (Kaplan 1957: fig. 5: 9). Such earrings are produced throughout the Late Bronze Age and Iron Age I but appear to be more common from the Iron Age II to the Persian periods and even well into the classical periods (Rosenthal-Higginbottom 2002). More such earrings may exist than is readily apparent, as many publications do not make the technical distinction between these earrings and their more common solid lunate counterparts.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 124	Excavator's dating. Jewelry pieces are possibly heirlooms from 7th-6th c.
Tel Michal	Copper alloy	4	Tomb 2001	6th-4th c.	Herzog and Levy 1999: fig. 2: 17-20	From individual cist tomb.
Tel Michal	Copper alloy	1	Tomb 2007	6th-4th c.	Herzog and Levy 1999: fig. 4: 17	From individual cist tomb.
Tel Michal	Copper alloy	1	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 7: 10	From individual cist tomb. Lunate only.
ʿAtlit	Gold	2	Tomb 12C	6th-4th c.	Johns 1933: pl. 16: 369-370	With added wire decoration. Excavator's dating.
ʿAtlit	Gold	1	Tomb 21B	6th-4th c.	Johns 1933: pl. 25: 637-638	Excavator's dating.
ʿAtlit	Gold	1	Tomb 23B	6th-4th c.	Johns 1933: pl. 30: 834	Excavator's dating.
Tell es-Saʿidiyeh	Silver	2	Graves 91, 27	6th c.	Tubb 2007: fig. 13: 2; 15: 5	From burial of young male.
Ketef Hinnom	Gold	5	Tomb 25	7th-5th c.	Barkay 1986: 28	---
Lachish	Silver	1	Tomb 106	7th-6th c.	Tufnell 1953: pl. 54: 6	Mixed tomb. Excavator's dating.
Tell el-Farʿah (S)	Gold	1	Tomb 240	10th-9th c.	Petrie 1930: pl. 38: 225	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Beth-Shemesh (new excavations)	Copper alloy over core(?)	1	Level 3?	10th-8th c.	Golani forthcoming C	Area C. Partial. Made over a core.
Eshtemoʿa	Silver	2	From hoard	10th c.	Yeivin 1990: fig. 17: 1; 24	Identified by excavator as nose-rings.
Tel Beth-Shemesh	Copper alloy	1	Room 514	Unclear	Unpublished	UM reg. no. 61-14-2534
Tel Beth-Shemesh	Copper alloy	1	Room 136	Unclear	Unpublished	UM reg. no. 61-14-445
Tel Beth-Shemesh	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-447

Earrings Type VII.2 – Decorated Hollow Lunate (Fig. 14: 14-17)

Hollow lunate earrings, usually with elongated hoops. Upon the lunate are found various modes of wire and granular decoration. Earlier examples of the 9th-8th centuries, such as those at Tel Ḥalif (Fig. 14: 12-13), feature a basic wire and granular decoration upon the lunate. However, other examples (Fig. 14: 14-17) are more elaborate and lavish in their use of granular decoration, creating intricate designs of lines, triangles and granular pyramids. The most sophisticated forms are to be found at the end of the Iron Age and into the Persian period, as seen in the double lunate earrings from Ketef Hinnom and Kamid el-Loz (Fig. 14: 16-17) featuring two hollow lunates set side by side with extensive granular and wire decoration. Hollow double lunate earrings without granular decoration are also found at Assur during the 7th century (Jacob-Rast 1962: 35-37, fig. 5). Gold hollow lunate earrings with short hoops and granular decoration are known from Sardis in western Asia Minor, dated to the 7th-6th centuries (Densmore Curtis 1925: pl. 7: 1, 4).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Kamid el-Loz	Silver	2	Grave 9	6th-4th c.	Poppa 1978: pl. 9: 7, 8	With double lunate.
Tell es-Saʿidiyeh	Silver	1	Grave 91	6th c.	Tubb 2007: fig. 13: 1-2	From young male burial. With granular decoration.
Jordanian Hoard	Silver	5	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 125-129	Excavator's dating. Jewelry pieces are possibly heirlooms from 7th-6th c.
Ketef Hinnom	Silver?	2	Tomb 25	7th-5th c.	Barkay 1986: 27	With double lunate.
Busayra	Copper alloy	1	From unregistered burial	Prob. 8th-5th c.	Sedman 2002: 415, pl. 10.195a	Partial and corroded. With granule(?) and wire(?) decoration.
Tel ʿIra	Silver	1	Tomb 14	8th-7th c.	Freud 1999: fig. 8.3	Partial. Corroded. Author's suggested redating-7th-6th c. See n. 164.
Tel Ḥalif	Silver	5	Tomb 20	9th-8th c.	Borowski 1994: fig. 7: 13-17	Mixed tomb.

7.1.8. Summary and Discussion – Earring Types I-VII

Earrings were fashioned primarily from silver, copper alloy and gold. From a collection of 122 earrings from selected sites of the 8th–6th centuries, 53% were found made of silver, 23% of copper alloy, 13% of gold with silver (electrum?), 4% of gold and the remainder of faience, glass and electrum (Limmer 2007: Chart 6.4). The predominance of silver was thought to be symbolic (2007: 280), although it is more probably to be understood in the context of its increased availability and use during the Iron Age II (section 2.6.2.).

The basic solid lunate earring form (Type I, Fig. 8: 1-6) first appeared locally during the latter portion of the Middle Bronze Age, and was the most common form of earring throughout the Late Bronze and Iron Ages and into the Persian period, being produced in a variety of forms and becoming the basic 'chassis' upon which more elaborate developments (Types II–IV) were based. Most variants of the solid lunate form were made of metals other than copper alloy. These include elongated (Type I.1a, Fig. 8: 7-10) and wide (Type I.2a, Fig. 8: 11-14) hoops, first appearing locally during the late Iron Age I and continuing to the end of the Iron Age II. Type I.Ia Earrings with Small Plain and Elongated Hoop apparently existed into the Persian period as well. While the majority of the early examples of Type I earrings in the Middle and Late Bronze Ages seem to have had hoops that opened at the top, most of the Iron Age II examples featured hoops that opened at the side. This change was the result of a lengthy transitional process that often saw both techniques occurring side by side in the Iron Age I and into the early part of the Iron Age II.[187]

Certain variants of the solid lunate form, such as Decorated Small Plain Earrings with a Short or Elongated Hoop (Types I.3a–I.3b, Fig. 8: 15-24), first appeared with wire decoration upon the lunate portion during the Late Bronze Age and were a local development that continued into the Iron Age II, sometimes with the use of braided wire, as in the examples from Eshtemoʿa (Yeivin 1990: figs. 16: 12, 13: 20) and Tell Jemmeh (Petrie 1928: pl. 1: 7-9, 12-13). However, only during the late Iron Age II and the Persian period did elaborately decorated forms appear locally and in Assyria at the same time. Maxwell-Hyslop states that wire and granular decoration on such ear-

[187] Interestingly, many of the more elaborate Neo-Assyrian earrings of the Iron Age II opened at the top (Maxwell Hyslop 1971: figs. 126-127), alongside forms opening at the side (idem: figs. 129-130).

rings during the latter portion of the Iron Age II was an eastern influence (1971: 237-240), probably because she was unaware of any local examples. These do exist, but it is unclear if they were locally produced or imported. Local Iron Age II examples consist of one earring from Tel Miqne-Ekron of the late 7th century (Fig. 9: 17), and other examples dating to the beginning of the Persian period or the very end of the Iron Age II at the earliest, such as those from the Jordanian hoard. Granular decoration was generally lacking in Assyria prior to the late Iron Age II. However, Syro-Phoenician jewelers had acquired extensive experience with this technique since the end of the Middle Bronze Age and especially throughout the Late Bronze Age (Politis 2001), suggesting that some of these craftsmen and their skills had moved eastwards, probably as a result of Neo-Assyrian conquests and deportations (Kraay and Moorey 1968: 195). Wound-wire decoration at the ends of the lunates was only characteristic of the Type I Solid Lunate Earrings of the late Iron Age II, continuing into the Persian period, as is the extensive granular decoration upon the lunate itself.[188]

Type I.6a Multiple-Lobed Sling Earrings (Fig. 9: 26-31) were a foreign invention, apparently originating in southwestern Anatolia where they appeared during the 3rd millennium. Use of this form reached the southern Levant by the 16th–15th centuries, as at Tell el-ʿAjjul (Petrie 1934: pl. 18: 79), and the shape continued throughout the Persian period, reaching as far as Iran (Maxwell-Hyslop 1971: pls. 44, 58B, 120, 168B). The simplicity of the form and its construction suggests that it may have been a local product, and the distinctive technique of attaching a thickened wire parallel to another earring hoop (Fig. 9: 31) appears to have been a local invention of the Persian period. Elaborate variants with extensive granular decoration (Type I.6b, see Fig. 9: 32) only appeared at the very end of the Iron Age II and into the Persian period. As with earrings of Type I.3, the late Iron Age II and early Persian period are notable for the fabrication of elaborate earrings, many of which bear granular decoration.

Type I.7 Earrings with Elongated Hoop and Sculpted Crescent (Fig. 9: 33) were rare, and appear to have been a local invention existing in the Iron Age II only.

Type II Earrings (Figs. 10-12) are composed of an earring hoop to the bottom of which is soldered a hollow or solid attachment with many variations in form and constructional technique. The hoop itself is often decorated. As in Type I Earrings, many Type II Earrings are quite elaborate and those from the end of the Iron Age and the Persian period exhibit lavish wire and granule decoration and intricate workmanship.

Fixed attachments on solid lunate earrings also appeared locally at the end of the Middle Bronze Age and throughout the Late Bronze Age. These Bronze Age earrings were relatively simple, taking the form of Solid Drop-Shaped Attachments (Type II.1b, Fig. 9: 18-22), Solid Hemispherical, Globular or Lenticular Attachments (Type II.2, Fig. 10: 1-14) or Solid Granule Cluster Attachments (Type II.6a, Fig. 11: 1-9).

Type II.1a Earrings with Hollow Drop-Shaped Attachments did not appear prior to the 8th century. While all the various techniques used in their construction and decoration were known previously in the ancient Near East, the general shape appears to have been a local invention that was also adopted and dispersed westward by the Phoenicians. Examples found at Nippur and Assur from the end of the Iron Age and during the Persian period (Rehm 1992: abb. 102 F.54, abb. 105 F.61) are virtually identical in form and manufacturing technique to local examples of the late Iron Age II. This strongly suggests that they were exported eastward, probably arriving as booty in the wake of the Neo-Assyrian conquests of the late Iron Age II.

Type II.1b (Fig. 9: 18-19) and Type II.2 Earrings (Fig. 10: 1-14) both appear to be local Bronze Age innovations. However, based on the numerous examples of these earrings depicted on 8th century Neo-Assyrian reliefs, the appearance of these forms also in the southern Levant during the late Iron Age II has been attributed to the Neo-Assyrians (Maxwell-Hyslop 1971: 226). Variants of Type II.2, including three-lobed forms such as those found at Tell Halaf from the 9th century (Fig. 9: 3; Maxwell-Hyslop 1971: fig. 133b) are usually considered to have been of Neo-Assyrian inspiration. However, the Neo-Assyrian origin of this type has already been contested by Platt, who noted that the "small [solid] ball-drop earring is a native Palestinian type that has closely related examples as early as the 16th-15th centuries" (Platt 1972: 145). The appearance of Types II.1b and II.2 during the Late Bronze Age thus indicates a local product, adopted and elaborated by the Neo-Assyrians during the Iron Age II, when it reappeared locally as a Neo-Assyrian development of the earlier, local form. Apparently, Syro-Phoenician craftsmen moving eastward during the Iron Age II as a result of Neo-Assyrian conquests and deportations, probably introduced the design into the Neo-Assyrian cultural sphere. Local examples of Type II.1b Earrings from the end of the Iron Age II (Fig. 9: 20; Kraay and Moorey 1968: pl. 22: 130), exhibit local decorative techniques such as wound-wire on the hoops, while at the bottom of the attachment is an eight-pointed star, symbol of the Neo-Assyrian goddess Ishtar (Kraay and Moorey 1968: 198).

Earring Types II.4 (Fig. 10: 17-20), II.5 (Fig. 10: 21-22) and II.7 (Fig. 11: 19-20) are relatively rare forms appearing only at the very end of the Iron Age and continuing into the Persian period. They have no apparent ante-

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188 Granular decoration on flattened, crescent-shaped earrings is found in southwestern Anatolia during the 2nd millennium (Antonova, Tolstikov and Triester 1996: 202-203, figs. 114-115, 232), although this phenomenon is too far removed in time to have relevance for the present examples.

cedents and are a fitting reflection of the advanced technological level of the jeweler's craft towards the end of the Iron Age and during the Persian period.

Earring Types II.3 and II.7 appear to have been primarily Phoenician innovations.

Type II.6a Earrings with Attachment of Solid Granule Cluster (Fig. 11: 1-9) began at the end of the Middle Bronze Age (16th–15th centuries) and were especially common throughout the Late Bronze Age to the end of the Iron Age II. Platt has noted that this was an Asiatic form; its presence in Cyprus at the beginning of the Late Bronze Age is evidence of local connections with the island (Platt 1972: 125). This form appeared simultaneously throughout the northern and southern Levant, including Cyprus, so it is difficult to pinpoint a place of origin. Stone molds of this type from Gezer (see Fig. 11: 10), Tell Jemmeh, Ugarit, Alalakh and Kuyundjik in Turkey indicate manufacturing centers throughout the Levant (see section 2.1.2.1. and n. 43).

Despite the very different constructional technique involved in their manufacture, Type II.6b Earrings with Attachment of Hollow Granule Cluster (Fig. 11: 11-17) may be regarded as a later development of the Type II.6a Earring concept. Type II.6b appears late in the Iron Age primarily due to technological advances in the forming, working and joining techniques of the ancient craftsmen, which enabled the production of larger and more impressive examples using the same amount of raw material. Both Maxwell-Hyslop (1971: 227-228) and Moorey (1980: 82-83) have suggested an eastern ancestry for this form, citing Assyrian or Iranian examples from as early as the 8th–7th centuries. However, this conclusion is unwarranted if Type II.6b is seen as a development of Type II.6a. The technical knowledge and skill required to fashion all the local examples of Type II.6b Earrings were already in use during the 7th century and as all the local examples of Type II.6b are of late Iron to early Persian date, they may simply reflect a local development, occurring simultaneously with eastern examples. The earrings from Tel ʿIra, for example (Fig. 11: 13-14), appear with wound-wire decoration and bulbous knobs on their hoops, a distinctly local decorative feature typical of the late Iron Age II and early Persian period. The rise of the Neo-Assyrian Empire and the rapid increase of trade, military conquests and cultural contacts between the southern Levant and the east may have caused the spread of this general shape, but all local examples appear to be of local manufacture.

Type II.8a Earrings with Attachment of Row of Granules (Fig. 11: 21-24) were an uncommon form, appearing throughout the Iron Age II and into the Persian period. Eastern and northern examples such as those from Uruk and Zinjirli are attributed to the 7th–6th centuries, as are examples from northern Syria (Maxwell-Hyslop 1971: 256, 268, pl. 217, fig. 124c), indicating a local origin for the type. This suggestion appears to be bolstered by the 'falcon pendants' of the 16th–15th centuries at Tell el-ʿAjjul (e.g., Petrie 1931: 7, pl. XV: upper right; Negbi 1970), which feature a large ring lavishly decorated by a row of globules and falcon-head terminals. This design also occurred in the Aegean world at the same time, as depicted in the Theran frescoes (Televantou 1992: pl. 41b-c; Younger 1992: pl. 63: b). This does not necessarily indicate a cultural influence and may simply be a suggestive method of using granular decoration. Type II.8b Earrings with Attachments of Perpendicular Rows of Granules (Fig. 11: 25-26) are rare, though none of the technological methods involved in their construction is unique. The finding of very similar earrings at Lefkandi in Greece, dated to the same period, suggests some cultural contact between these two regions during the Iron Age IIa, possibly a result of Phoenician trade.

Type II.9 Earrings with 'Tassel' Attachment (Fig. 11: 27-34) are unique to the southern Levant and Jordan. The general form began at the end of the Late Bronze Age or in the Iron Age I (13th–11th centuries), as at Timna and Madaba, and during the Iron Age I–II transition it incorporated lavish wire and granular decoration. Such extensive and sophisticated decoration is clear testimony to the skill of the local craftsmen at this time, although it was something of an anomaly considering that such lavish use of wire and granular decoration was rare during the Iron Age I–II transition. This type did not continue after the 10th–9th centuries in any form.

Type III Earrings (Figs. 13-14: 1-6) are composed of a hoop with a suspension ring holding another suspension ring and a pendant. Such earrings were not common during the Late Bronze Age and Iron Age I and appeared sparingly during the Iron Age II in a limited number of variants. Pendants on earrings are generally not found until the Iron Age II, aside from a very few types appearing during the Late Bronze Age, such as the ribbed drop-shaped pendant earrings from Deir el-Balaḥ (Dothan 1979: ills. 158, 164, 171-173) and the solid lotus-shaped pendant earrings from Lachish (Tufnell 1958: pl. 25: 31, 44). A few 9th century (?) examples of gold lunate earrings with suspension hoops, though lacking pendants, are known from Tell Jemmeh (Petrie 1928: pl. I: 9, 12-13), although most examples appear in the late Iron Age II. The pendants themselves were usually an outgrowth of local Late Bronze Age forms, such as the Type III.1a Earrings with Hollow Lotus Pendant (Fig. 12: 1) or Type III.2 Earrings with Basket Pendant (Fig. 12: 2-8), which derived from earlier Type III.2a prototypes of the late Iron Age I–early Iron Age II transition (Fig. 13: 1-4). Local earring types with pendants typical of the Iron Age II and Persian period may be associated with the Phoenicians. The innovativeness of this culture, drawing on earlier Canaanite styles of the Late Bronze Age and Iron Age I, continued an earlier tradition of suspended pendants from solid lunate earrings.

Type III.2 Earrings with Basket Pendant (Fig. 12: 2-8) probably developed from a Type III.2a prototype. The basket pendants, which appear to be miniaturized replicas of a possibly well-known object, resemble certain types of reliquaries (Seyrig 1959; Seeden 1980: 110, pl. 103: 1726) as well as an unpublished object from the renewed excavations at Tel Beth-Shean. The extensive distribution of Type III.2 Earrings during the 7th–6th centuries at sites in Phoenicia as well as sites directly associated with Phoenician western expansion and colonization, strongly ties them to the Phoenician culture (Golani 2010). Type III.1a Earrings with Hollow Lotus Pendant (Fig. 12: 1) and Type III.4 Earrings with Twisted Wire Pendant (Fig. 13: 5-6) may also have been directly associated with the Phoenicians.

Type IV Composite Earrings (Fig. 13: 7-9) have both an attachment and one or two pendants suspended from the attachment, therefore they are here termed composite earrings. Composite earrings, which were not common, were a Phoenician innovation occurring only at the very end of the Iron Age II (7th–6th centuries). Though only one example is known locally, all other published specimens may be directly related to Phoenician culture and usually incorporate Type III.2 Earrings with Basket Pendant that were also a Phoenician form.

Type V Annular Earrings with Truncated Ends are thick rings with a round or lozenge-shaped cross-section, which always appear with a narrow section or cleft cut out of their circumference. These items were primarily of Egyptian inspiration, hence their limited chronological range within the Late Bronze Age, continuing into the Iron Age I. This type is not illustrated here as no local examples were found in the Iron Age II. Hollow, gold-ribbed examples resembling this form are known from Sardis in western Asia Minor dating to the 7th–6th centuries (Densmore Curtis 1925: pl. 7: 2). The Phoenicians adopted the form during the Iron Age II, after it had essentially become obsolete. Some of these objects may have been earrings, while others may have been hair-rings as the narrow section or cleft is sometimes too narrow to pass through an earlobe (Petrie 1927: 22). Evidence from mummies or pictorial representations is lacking as to how they were actually worn.[189] They appear in ivory, shell, glass, gold or stone.

Type VI Earplugs (Fig. 14: 1-5) were very rare. They appeared primarily during the Iron Age I, when Egyptian fashions were still in vogue locally. The very limited continuation of this type into the late Iron Age I and Iron Age II, as suggested by Phoenician examples found outside the southern Levant, suggest that these objects are actually of Phoenician manufacture and represent only an indirect Egyptian influence.

Type VII Hollow Lunate Earrings (Fig. 14: 6-17) are of the same general form as their Type I Solid-Lunate counterparts, but are made of sheet-metal, sometimes laid over a core in order to provide more strength and durability. This technique enabled the production of larger, more prominent earrings using less precious material. Decorated Hollow Lunate earrings display similar styles of decoration as their Solid-Lunate counterparts during the same periods. Lavish wire and granular decoration appeared mainly during the late Iron Age II and also in the Persian period along with wound-wire decoration at the ends of the crescent, also commonly found on the Solid Lunate attachments of the same period.

Granular decoration on lunate_earrings appeared in Assyria at the beginning of the 7th century. Moorey notes that the lack of elaborate granular embellishment on Assyrian jewelry prior to this period suggests that this fashion came from Syria or Phoenicia, where such elements were common. Use of lavish granular decoration was introduced into the Neo-Assyrian empire by craftsmen, gifts or booty from the 8th century onwards (Kraay and Moorey 1968: 195). The popularity of such decorative styles reached as far as Urartu, as seen in the gold earrings from Karmir Blur, probably of 7th century date, that were also decorated with granular ribs and triangles in addition to wound-wire collars at the ends of the crescent (Piotrovskii 1959: pl. 46a: 5).[190] The close association of this form of earring with Syro-Phoenician workshops is also indicated by its appearance on a Syrian delegate in the Achaemenid court at Persepolis (Walser 1966: pl. 46). However, neither the crescent form nor the elaborate granular and wire decoration associated with it continued for much longer into the Persian period, and they were not popular among Hellenistic jewelers (Kraay and Moorey 1968: 196).

7.1.9. The Cultural Context of Earrings

Earrings are not common in iconographic depictions from the southern Levant during the Iron Age II. When found, they are usually only schematic representations and rarely can a specific type be discerned. However, Neo-Assyrian,[191] Egyptian[192] and Aegean[193] artistic representations show detailed renditions and earrings have been found *in situ* in local burials.

[189] A notable exception to this is a New Kingdom mummy from Balabish with such rings on the ears, though the cleft in these rings is much wider than usual (Wainwright 1920: 55, pl. 19: 2). A strictly funerary function for these rings has also been suggested, i.e., that they were simply included as token jewelry and not meant to be worn at all (Williams 1924: 116).

[190] Maxwell-Hyslop (1971: 230) also notes several examples from an unstratified context at Al-Mina in Turkey, which she dates to the 7th century (1971: pl. 213), and two unprovenienced examples from a private collection (1971: pl. 214).

[191] Neo-Assyrian reliefs often depict elaborate earrings worn by kings (Pritchard 1954: figs. 446, 617) and high officials (e.g., Madhloom 1970: 90-93; Maxwell-Hyslop 1971: 236-237, figs. 126-127; Fales and Postgate 1992: 19, 30, 45, 70, 109, 138, 144), most of which are variants on the solid-attachment drop earring (Earring Type II.1b, Fig. 9: 18-22). Neo-Assyrian scribes and other functionaries, as depict-

In the southern Levant, earrings were worn by males and females alike from the Late Bronze Age until at least the Persian period. Schematic depictions of simple earrings, such as Type I.1 Small Rings, are known locally from the Late Bronze Age, for example a seated bronze figure of a Syrian goddess from Lebanon, now located in the Louvre, which wears a single gold ring through the ear (Pritchard 1954: fig. 466). A gold-plated bronze figurine from Megiddo Stratum VII or VI, dated to the Late Bronze Age II–Iron Age I, portrays a seated male with a simple gold earring (Loud 1948: pls. 237, 238). A possible depiction of three rings on each ear is seen in a fragment of a Late Bronze Age female plaque figurine from Lachish (Kletter 2004: fig. 23.54: 3), and a similar arrangement of multiple rings in the ears is seen on an Iron Age II female figurine head from Bethsaidah (Arav and Freund 1999: fig. 39).

On a clay plaque figurine from Hazor dated to the 8th century, a female tambourine player appears to wear simple round rings in her ear (Yadin et al. 1960: pl. 76: 12), as well as a circular pendant on the neck and multiple bracelets on the arm. Elongated pendant earrings may possibly be identified on an 8th century female figurine from Tel Batash (Mazar and Panitz-Cohen 2001: pl. 30: 1), though this depiction may also represent a locket of braided hair.

An Ammonite stone statuette from Khirbet el-Hajjar in Jordan, probably dated to the 8th–7th centuries, shows a female wearing a pair of Neo-Assyrian type earrings (Ibrahim 1971: pl. 1 at bottom; and see Maxwell-Hyslop 1971: fig. 124: c for a 7th century parallel from Zinjirli) depicted as several rings or globules soldered in a line at the bottom of a round, thickened earring hoop (Earring Type II.8a, Fig. 11: 21-24; see above 7.1.2). A statuette from ʿIrjan in Jordan, also of Ammonite style and associated with the Iron Age II, represents a male wearing a Neo-Assyrian type earring (Khairi 1970: pl. 1f; see also *ADAJ* vol. 15 [1970], pl. 27).

It has been suggested that the fashion of wearing earrings was introduced into Egypt from the east, where ornaments on the ears had been in fashion since the Early Dynastic Period in Mesopotamia (Aldred 1971: 198). Other scholars, noting that Egyptians were certainly aware of earrings prior to the Second Intermediate Period, have suggested that the practice was not borrowed from the east, but rather from the Nubians to the south (Andrews 1976: 44; 1990: 111). A New Kingdom Egyptian mural from the time of Amenhotep III at Thebes depicts Nubians and Syrians kneeling in adoration to the king (Pritchard 1954: fig. 4). The black Nubians wear large gold rings in their ears and gold bead bracelets and necklaces on their arms and necks. While both theories have their merit, Wilkinson (1971: 121) has also suggested that the Nubian-type rings in the ears may have been influenced by Near Eastern traditions during the Hyksos period in Egypt.

In archaeological excavations of burials, it is often difficult to establish the placement of the earrings in the ear, as there was nothing holding them in place after decomposition of the body.[194] The archaeological evidence from burials as early as the Middle Bronze Age and well into the Persian period indicates that earrings were worn by men, women and children alike. A pair of Type II.2 (Fig. 10: 1-14) gold earrings were revealed *in situ* on the skull of a child within a Middle Bronze Age jar burial at Megiddo (Loud 1948: fig. 338), and four gold Type I.6a (Fig. 8: 26-31) earrings were found near and inside the skull (probably associated with the ears) of a Middle Bronze Age child burial from Tel Beth-Shean (Yahalom-Mack 2007: pl. 9.6: 1-4). An earring with a cluster of granules at its base (Type II.6a, see Fig. 11: 1-9), found *in situ* as a nose-ring in a Late Bronze Age burial at Megiddo (Loud 1948: pl. 225: 9, T. 2121), indicates that even more elaborate earrings could have been used as nose-rings. If not for the position of this latter example on the skull in the area of the nose, its use as a nose-ring would not have been apparent.

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ed on an 8th century relief from Tell Barsip, also wore earrings of simple, annular form (Pritchard 1954: fig. 235), not as elaborate as those of the king. A figurine fragment from Zinjirli of the Persian period depicts a male head with annular earrings decorated with studs, one on each ear (Andrae 1943: fig. 78, pl. 34: f-g).

192 Egyptian pictorial representations rarely portray earrings. Introduced into Egypt only during the Second Intermediate Period by the Hyksos (Aldred 1971: 198; Andrews 1990: 109-110), this fashion never really caught on in Egypt until much later, during the Iron Age, when even then Egyptians seldom wore them. Exceptions to this are sporadic appearances of earrings during the Middle Kingdom (Eaton-Krauss 1982: 227), such as an ivory doll wearing spiral earrings from a grave at Hû, probably to be associated withwith the 12th Dynasty (Petrie 1901: p. 43 f., pl. 26), and other burials at Sheikh Farag that are also assigned to the Middle Kingdom (Reisner 1923: 280). Pharaoh was never shown with earrings, but the queen and other women were occasionally portrayed with ear ornaments, such as a portrait head in wood of Queen Tiy, wife of Amenhotep III, and Egyptian women musicians of the New Kingdom (Pritchard 1954: figs. 398, 209). Many of these appear to have been earplugs (Andrews 1990: fig. 126), a type of ornament that was exclusively Egyptian and also found in the southern Levant during the 11th–10th centuries (Earring Type VI, Fig. 14: 1-5; see above 7.1.6). In Egypt, earrings were occasionally given as 'honorific' jewelry that served as a status symbol, such as on a New Kingdom scene from Memphis in which the general Horemheb (later pharaoh) was given two pairs of earrings in addition to lavish bead collars (Andrews 1990: fig. 168).

193 During the Middle and Late Minoan periods in the Aegean, earrings were worn by both men and women alike (Televantou 1992: pl. 41: a-c; Younger 1992). These earrings are usually depicted as large annular rings, pointed and tapering at the top, and thickening towards the bottom. They decorate the ears of women of varying appearance and possibly of different social function and status. Men wore identical or similar earrings, as in the famous scene of the 'boxers' from Akrotiri (Younger 1992: pl. 63: a), or a depiction on a carved ivory handle from Clytemnestra Tholos at Mycenae, dated to the Late Bronze Age (Younger 1992: pl. 63: b), which also portrays earrings comprised of two interlocking rings. According to Younger (1992: 275), in most depictions, men wearing earrings seem to have been mature or of high rank.

194 In contrast to metal anklets, armlets and bracelets that were more likely to remain in position on a primary burial simply because they were placed around a limb.

Three Type I.1 (Fig. 8: 1-6) gold earrings found on the right ear of an adult male skeleton are reported from Grave 331 at Tell es-Saʽidiyeh, dated to the 12th century (Tubb 1990: 40). Two pairs of Type I.1a silver earrings (Fig. 8: 7-10) were identified on either side of a female skull from a burial of the Persian period near Ashqelon (Golani 1996b: 116, fig. 3). Earrings of simple form were discovered in the location of the ears in child burials of undetermined sex from Kamid el-Loz, dated to the Persian period (Poppa 1978: pl. 15: 2; pl. 41: Grave 28; pl.19: 3; pl. 41: Grave 63; pl. 40: Grave 13; pl. 16: 1-2; pl. 31: Grave 34, pl. 16: 1-2; pl. 31: Grave 35). Some of these juvenile burials also revealed similar simple earrings in the area of the nose, probably functioning as nose-rings (Poppa 1978: pl. 19: 1-2; pl. 41: Grave 63; pl. 16: 12-13; pl. 41: Grave 40). A burial of a young female from this site exhibited the use of three simple earrings in each ear (Poppa 1978: pl. 3: 12-17; pl. 26: Grave 1), while an adult female skeleton was unearthed with a pair of elaborate silver earrings on the left side of the skull only (Poppa 1978: pl. p: 7-8; pl. 27: Grave 9). However, in another burial of an adult female at Kamid el-Loz, an elaborate silver earring was found near the thigh (Poppa 1978: pl. 12: 24; pl. 28: Grave 15), indicating that this object had either been moved from its original place or conversely, may have been placed in the tomb separately, detached from the body at the time of burial. At Kamid el-Loz, elaborate silver earrings were also placed on skulls of infants (Poppa 1978: pl. 14: 15-16; pl. 29: Grave 22).

Earrings are one of the more prominent frontal displays of rank, status and wealth, and it is therefore not surprising that these objects are often of elaborate construction and decoration. They could have been worn as single items, as pairs, or as multiple earrings on one or both ears. Earrings fashioned for the ear could also have been worn as nose-rings. Because they were worn to be seen, the meaning of such arrangements was probably significant, though they remain unknown to us. During the Iron Age II in the southern Levant, earrings do not appear to have been gender restricted and were even worn by children and infants.

Other cultures appear to have had different earring fashions. Earrings were not very popular among the Egyptians during the Middle and New Kingdoms and were probably introduced into Egypt by foreigners. In the Aegean late Middle Minoan and Late Helladic Ages, earrings were reserved for individuals of high rank and status, though by the classical period in Greece, earrings were regarded as a foreign, eastern custom.[195] As is evident from the Neo-Assyrian pictorial representations of the Iron Age II, elaborate earrings were reserved for high-status figures such as kings, priests and deities, while lesser functionaries, such as scribes, wore more simple forms.

7.2. Small Rings

Any ring up to 3 cm in diameter is here defined as 'small' and may have served as an earring, nose-ring, hair-ring or finger-ring. Small rings were made from a wide variety of materials that included metal, stone, siliceous materials, bone and shell. Small rings are classified into three major types, differentiated by form, method of manufacture and function. The most simple and basic form is that of Type I – Open-Ended Annular (Fig. 15: 1-3), and two more major variants are also recognized. These include Type II Spiral Rings (Fig. 15: 8-10) and Type III Finger-Rings that could only have functioned as finger-rings (Figs. 16: 11-30, 17).

7.2.1. Small Rings Type I – Open-Ended Annular

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
I.1	Plain	Early Bronze Age and onwards	Very common	Fig. 15: 1-3
I.2a	Decorated (beaded or with bulbous end)	Middle Bronze IIC – Late Bronze, Iron Age II	Rare	Fig. 15: 4-5
I.2b	Decorated with Knotted or Wound-wire Terminals	Late Bronze – Persian	Common	Fig. 15: 6-8

Small Rings Type I.1 – Plain (Fig. 15: 1-3)

Small plain rings made of wire, usually round in section, with tapering or squared-off (cut) terminals. Such rings are a very simple and basic form locally found already in the Early Bronze Age (Ben-Tor 1975: fig. 12: 12). They may have functioned as finger-rings, earrings, nose- or hair- rings and are most commonly found made of copper alloy, though gold, silver and iron[196] examples are also present.

[195] In 401 BCE, a soldier was discharged from Xenophon's army because he had pierced ears 'like a Lydian' from Asia Minor (Williams and Ogden 1994: 33).

[196] The use of iron in the production of small rings, though not common, is found during the beginning of the Iron Age I, such as at Tell el-Farʽah (S) (Petrie 1930: pl. 30: 11) and numerous examples have been found in Tomb 65 at Khirbet Nisya (Livingston 2002: fig. 8) dated to the 12th-10th centuries.

Small Rings Type I.2a – Decorated (beaded or with bulbous end) (Fig. 15: 4-5)

Open-ended rings made of thick round wire, with an added decoration upon the shank (Fig. 15: 4) or as a bulbous attachment on one of the ends (Fig. 15: 5). The latter could have also functioned as earrings and have so far been found only at Tel Miqne-Ekron during the Iron Age II.

The rings with grooved decoration along the shank give an impression of strung beads with a fluted decoration. This decoration may have been made by casting, cutting or impressing grooves into the wire before it was bent into shape, a technique known as 'beading' (section 2.1.2.3.). Such rings are usually found in silver or gold, and locally appear already in the 16th-15th centuries such as at Tell el-ʿAjjul (Negbi 1970: 26, pl. 3: 10, catalogue no. 96, termed 'ribbed' earrings). They are common throughout the latter portion of the Middle Bronze and into the Late Bronze Age, after which they cease to be found (Maxwell-Hyslop 1971: 114). Two silver examples of this type found in Strata IB and IC (Late Iron Age) at Tel Miqne-Ekron (Golani forthcoming A), should probably be regarded as residual from earlier strata at the site that includes a Late Bronze and a Middle Bronze Age occupation (Gittlen 1992). Thus, these rings are more probably to be seen as a form primarily typical of the Middle and Late Bronze Ages and not the Iron Age II.

Small Rings Type I.2b – Decorated with Knotted or Wound-wire Terminals (Fig. 15: 6-8)

Small rings made of one wire strand, appearing with round, lentoid or semicircular shank and thin, elongated and tapering ends that overlap at the top, twisted in a wound-wire decoration that often appears as a 'knot'.

Wound-wire terminals are a common feature on shanks of finger-rings bearing a swivel mount since the Middle Bronze II period (see below Type III.6a Small Ring; Fig. 15: 22-28). This technique is also employed in the decoration of bracelets in the Middle Bronze and Late Bronze Age (Guy 1938: fig. 179: 3-5).

Made of silver or gold, less often in copper alloy, Type I.2b Small Rings occur in the Late Bronze Age, as at Lachish (Fig. 15: 6) and continue into the Persian and Hellenistic periods, as at Tel Michal (Fig. 15: 8). Possibly to be seen as a local design, the form and technique also appear to have been adopted by the Phoenicians and exported by them to the west, such as from Tharros, where they are dated to the 5th-3rd centuries (Fig. 15: 7; Pisano 1987: 81-82 ['Type V' earrings], pls. 38: j, k, m, 39: c).

In some of these rings, the wire appears in a 'knot of Hercules', or 'square knot' (see Fig. 15: 7). The 'Herculean knot' design has affinities in Greek jewelry of the 4th-3rd centuries (e.g., Marshall 1911: 1607-1609), but the general conceptual design of this ring is found at Lindos in Rhodes dated to the Iron Age II (Blinkenberg 1931: pl. 59: 1367) and throughout the Phoenician west from the 6th-3rd centuries (see Pisano 1987: 82 for discussion and further references). The knot design occurs in Type III.7 Small Rings (see below, and Fig. 16: 4). This arrangement may be of local origin, as is suggested by a finger-ring with a bronze band and knot executed with electrum wire from Megiddo Tomb 911c dated to the Middle Bronze II or Late Bronze II period (Guy 1938: pl. 120: 10).[197]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Silver	1	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 8: 37	---
Megiddo	Copper alloy	1	Stratum II	7th c.	Lamon and Shipton 1939: pl. 86: 9	Excavator's dating.
Adoni Nur	Silver	1	Tomb	7th c.	Harding 1953b: pl. 7: 14	From sifted dump outside tomb. Excavator's dating.
Amman	Silver	3	Tomb	8th-4th c.	Hadidi 1987: figs. 8: 14, 17, 11: 5	Mixed tomb.
Lachish	Gold	1	Pit 4021	10th-6th c.	Tufnell 1953: pl. 57: 47	Mixed pit. Excavator's dating.
Lachish	Silver	1	Burial cave 4004	15th-13th c.	Tufnell 1958: pl. 25: 10	Mixed tomb. Excavator's dating.
Kamid el-Loz	Copper alloy	1	Area IIIA15 S	Unclear	Hachmann and Penner 1999: pl. 17: 2	---

7.2.2. Small Rings Type II – Spiral Rings

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
II.1	Plain Spiral	Early Bronze – Persian	Common	Fig. 15: 9-11
II.2	Double Stranded Spiral	Iron Age I	Rare – Mycenaean Import?	---

[197] This form of knot appears in Greece already during the Mycenaean period and in the classical Greek world, the knot of Hercules was connected with marriage, being tied around the garment of the bride and untied by the groom (Williams and Ogden 1994: 44).

Small Rings Type II.1 – Plain Spiral (Fig. 15: 9-11)
Rings made of wire, round or plano-convex in section, with tapering ends, wound one and a half to three times around in a spiral.

Spiral rings were found on skulls in graves at Ur and sometimes on the upper shoulder, suggesting that they were threaded over a long lock of hair (Maxwell-Hyslop 1971: 5; see von Luschan 1943: pl. 34 for a depiction of a figure wearing such rings as hair-rings during the Late Assyrian period). A very common form, spiral wire rings first appear in the Early Dynastic period at Ur and at Mari (Maxwell-Hyslop 1971: 5, 12, 20, pl. 5, 15a) and are found in Egypt already during the Second Intermediate period, where they may have been an expression of Nubian influence (Eaton-Krauss 1982: 228). In the southern Levant, they begin to appear in the Early Bronze I in gold and silver at Azor, where they are identified as earrings (Ben-Tor 1975: 24, fig. 12: 10-12, pl. 22: 6). They are found throughout the Iron Age I-II as well, as in a copper alloy example from a dolmen in the Golan (Epstein 1985: fig. 2: 1) and silver examples from Tel Miqne-Ekron (Golani and Sass 1998: fig. 13: 3). Spiral rings continue to at least the Persian period, when a tube often replaces the wire (e.g., examples from Tel Michal, see Muhly and Muhly 1989: 285). As in the Type I.1 Plain Small Rings, Type II.1 Spiral Small Rings are most commonly found made of copper alloy and silver, occasionally of gold and rarely of iron (e.g., at Tel Masos during the Iron Age I, see Fritz and Kempinski 1983: pl. 103: 9).

7.2.3. Small Rings Type III – Finger-Rings

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
III.1	Closed Annular – Siliceous Material	Late Bronze – Iron Age I	Egyptian form	---
III.2a	Flattened Open-Ended Annular	EB onwards	Common. Decorated examples Iron Age I – early Iron Age II.	Fig. 15: 12-16
III.2b	Flattened Closed Annular	Uncertain	Rare	---
III.3a	with Cartouche-Shaped Bezel – Siliceous Material	Late Bronze – Iron Age I[198]	Egyptian form	---
III.3b	with Oval-Shaped Bezel – Stone	Late Bronze – Iron Age I	Egyptian form	---
III.3c	with Oval-Shaped Bezel – Metal (‘Dome’ or ‘Stirrup’ rings)	Late Bronze – Iron Age I	Egyptian form	---
III.3d	with Oval-Shaped Bezel – Bone	Late Bronze – Iron Age I	Egyptian form, rare	---
III.4	with Attached Cartouche-Shaped Bezel	Late Iron Age II	Common, Phoenician form	Fig. 15: 17-18
III.5	with Widened, Flattened Ends Holding a Mount	Late Iron Age II	Common	Fig. 15: 19-22
III.6a	with Swivel Bezel Mount and Scarab	Middle Bronze II – Persian	Common	Fig. 15: 23-29
III.6b	with Swivel Bezel of Solid Metal Scaraboid	Late Iron Age II – Persian	Rare	Fig. 15: 30-31
III.7	Multi-Stranded	Late Bronze – Persian	Common	Fig. 16: 1-3
III.7a	Multi-Stranded with Knot	Late Iron Age II – Persian	Rare, Phoenician form?	Fig. 16: 4-6
III.7b	Multi-Stranded with Cloisonée Bezel	Late Iron Age II	Rare	Fig. 16: 7
III.8a	with Flattened Oval-Shaped Bezel – Metal	Late Bronze – Persian	Common	Fig. 16: 8-14
III.8b	with Flattened Oval-Shaped Bezel – Siliceous Material	Late Bronze Age	Rare	---
III.9a	with Rectangular-Shaped Bezel	Late Iron Age II-Persian	Rare	Fig. 16: 15-17

198 Two examples of this form in faience were found at Tomb 510 and Tomb 110 at Tell el-Farʽah (S), both dated to the 11th c. (Petrie 1932: pl. 25: 395, 402). However, these appear to have been seals that were too large to have been worn as a finger-ring. Further examples of Type IIIa and Type IIIc finger-rings are known from Tomb C at Saḥab in Jordan, probably to be dated to the 12th-11th c. (Dajani 1970: pl. 23: SA 179, SA 180, SA 201).

III.9b	with Round Bezel	Iron Age II – Persian	Rare	Fig. 16: 18-20
III.10	Closed Shell Ring	MB II – Iron Age II	Rare	Fig. 17: 1
III.11	Plain Closed Annular – Metal	Middle Bronze and onwards	Common	Fig. 17: 2-3
III.11a	Flattened Plain Closed Annular – Metal	Iron Age I-II	Rare	Fig. 17: 4
III.12	Plain Closed Annular – Bone	Uncertain	Rare	---
III.13	with Beads on Wire Bar between Terminals	Middle – Late Bronze	Rare	---
III.14	Bone Ring with Square-Shaped Bezel	Uncertain	Rare	---

Small Rings Type III.2a – Flattened Open-Ended Annular (Fig. 15: 12-16)

Rings made of a flattened, hammered metal in the form of a ribbon with rounded, tapering ends, usually found overlapping. These rings probably functioned as finger-rings though their use as hair-rings is possible.

Commonly made of copper alloy, occasionally silver and gold, and rarely of iron, most examples are simple and undecorated. Simple examples occur as early as the Early Bronze Age, such as at Qiryat Ata (Golani 2003a: fig. 7.6: 6). However, decorated examples begin to occur primarily during the Late Bronze Age and Iron Age I (Fig. 15: 15-16) and though not common, they continue into the early Iron Age II as well. These may bear an intaglio decoration (Fig. 15: 15) or are covered with silver foil, also decorated intaglio (Fig. 15: 16).[199] The decorated examples are often wider on one side of the ring and more tapering on the other side where the two tapering ends often overlap. Upon this wider side, various types of incised decorations are found, while some of these rings also include epigraphic signs of Hittite origin as at Tel Nami, Tell el-Farʽah (S), Megiddo and Tel Beth-Shean. These have been termed 'Hittite Signet Rings' found in Syria and also Anatolia (Singer 1993; 2007) and may represent Hittite imports to the southern Levant that are found in the Late Bronze Age and throughout the Iron Age I. One example from Tomb 220 at Tell el-Farʽah (S) is dated to the 10th-9th centuries, though this object may possibly have been an heirloom as well. During most of the Iron Age II, these rings are either plain (Fig. 15: 14) or with a simple ridged decoration (Fig. 15: 12-13).

Gold or silver plating on jewelry appears locally during the Iron Age I. Small iron rings with gold plating occur at Megiddo Tomb 23, dated to the 12th century (Guy 1938: pl. 166: 2, 176: 10).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Copper alloy	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig. 25.10: 167	---
Akhziv cemetery	Copper alloy	1	Tomb ZR XXVIII	7th-5th c.	Dayagi-Mendels 2002: pl. 4.20: 9	Dating according to Dayagi-Mendels.
Tawilan	Copper alloy	1	Area III	7th-5th c.	Bienkowski 1995: fig. 9.6: 1	---
Golan Heights	Copper alloy	2	Dolmen 16	7th-6th c.	Epstein 1985: fig. 5: 14-15	With ribbed decoration.
Tel Miqne-Ekron	Copper alloy	1	Stratum IB	7th c.	Golani forthcoming A	---
Tel Ash-kelon	Copper alloy	1	Grid 50, Phase 7	7th c.	Park 2011: fig. 15.4: 46271	With engraved line and dot decoration.
Akhziv cemetery	Copper alloy	1	Tomb ZR XXXI	8th-7th c.	Dayagi-Mendels 2002: pl. 4.23: 5	Dating according to Dayagi-Mendels.
Hazor	Copper alloy	1	Stratum IV	8th c.	Yadin et al. 1958: pl. 106: 9, 166: 1	---
Lachish	Iron	1	Burial cave 4005	10th-6th c.	Tufnell 1953: pl. 57: 44	Corroded. Found on a finger-bone alongside two Type III.10 Shell Rings. Excavator's dating.
Akhziv cemetery	Copper alloy	1	Tomb ZR IX	10th-7th c.	Dayagi-Mendels 2002: pl. 4.7: 38	Dating according to Dayagi-Mendels.

[199] Similar rings in silver and bronze are also known from graves of Period I at Hama in Syria (Riis 1948: 127-128), dated to the Iron Age I. One of the silver Hama rings bears a grooved border and incised cuneiform signs on the central outer panel (Riis 1948: fig. 154: c) in a similar manner to the ring from Tel Beth-Shean.

Tell el-Farʿah (S)	Copper alloy	1	Tomb 222	10^{th}-9^{th} c.	Petrie 1930: pl. 32: 169	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	1	Tomb 220	10^{th}-9^{th} c.	Petrie 1930: pl. 36: upper center	Decorated intaglio. Possibly of Hittite inspiration. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Jemmeh	Copper alloy	2	Unclear	10^{th} c.(?)	Petrie 1928: pl. 20: 50	Excavator's dating.
Tell el-Farʿah (S)	Copper alloy	1	Tomb 506	11^{th} c.	Petrie 1930: pl. 30: 140	From a single-period burial. Dating according to Laemmel 2003: Table 2.
Tel Beth-Shean	Copper alloy	1	Stratum S-2	11^{th} c.	Golani 2009: fig. 11.2: 11	---
Tel Beth-Shean	Gold	1	Level V	11^{th} c.	Unpublished	With incised linear pattern. UM reg. no. 29-105-97
Tel Beth-Shean	Silver?	1	Level V	11^{th} c.	Unpublished	UM reg. no. 31-50-254
Tell el-Farʿah (S)	Copper alloy	2	Tomb 615	12^{th}-11^{th} c.	Petrie 1930: pl. 30: 115-116	Dating according to Laemmel 2003: Table 3.
Megiddo	Copper alloy	1	Stratum VIB	12^{th}-11^{th} c.	Loud 1948: pl. 224: 16	With incised herringbone decoration. Possibly of Hittite inspiration. Dating according to Mazar 2008.
El-Jib (Gibeon)	Copper alloy	1	Tomb 10b	12^{th}-11^{th} c.	Unpublished	UM reg. no. 62-30-1042
Tell el-Farʿah (S)	Gold	1	Tomb 532	12^{th} c.	Petrie 1930: pl. 22: 198, 36: upper left	From 'Philistine' tomb. Dating according to Laemmel 2003: Table 2.
Tell el-Farʿah (S)	Gold	1	Tomb 122	12^{th} c.	Petrie 1930: pl. 43: 528	From a single-period burial. Dating according to Laemmel 2003: Table 1.
Tel Miqne-Ekron	Copper alloy and Silver plating	2	Stratum VIB	12^{th} c.	Golani 1996a: fig. 10: 2	One ring with incised decoration.
Tel Miqne-Ekron	Copper alloy	1	Stratum VIA	12^{th} c.	Golani forthcoming A	---
Tel Miqne-Ekron	Copper alloy	1	Stratum VII	12^{th} c.	Golani forthcoming A	---
Megiddo	Gold	2	Tomb 39	12^{th} c.	Guy 1938: pl. 166: 3-4; fig. 176: 12	With incised designs. Possibly of Hittite inspiration. Excavator's dating.
Tel Beth-Shean	Copper alloy	3	Stratum S-3a-b	12^{th} c.	Golani 2009: fig. 11.2: 10	---
Tel Beth-Shean	Copper alloy	1	Stratum S-4	12th c.	Golani 2009: fig. 11.2: 9	---
Tel Beth-Shean	Silver	1	Stratum S-4	12th c.	Thompson 2009: fig. 11.1: 12	With cuneiform (?) hieroglyphs intaglio. Possibly of Hittite inspiration.
Sahem	Silver	1	Tomb	13^{th}-12^{th} c.	Fischer 1997: fig. 29: 8	Mixed tomb. Partial. With incised design.
Sahem	Copper alloy	3	Tomb	13^{th}-12^{th} c.	Fischer 1997: fig. 30: 2-4, pl. 46	Mixed tomb.
Tell el-Farʿah (S)	Silver	2	Unclear	Prob. 13^{th} -12^{th} c.	Starkey and Harding 1932: pl. 73: 58, 65	With epigraphic signs intaglio. Possibly of Hittite inspiration.
Tel Nami	Copper alloy	1	Tomb	15^{th}-13^{th} c.	Singer 1993	Actually a closed ring. With ribbed decoration on back and epigraphic signs intaglio on widened front. Possibly of Hittite inspiration.

Tell el-ʿAjjul	Gold?	1	Unclear	15th-13th c.	Petrie 1932: pl. 18: 249	Excavator's dating.
Tel Beth-Shemesh	Copper alloy	1	Unclear	Unclear	Unpublished	With incised line decoration around circumference. UM reg. no. 61-14-439
Tel Beth-Shemesh	Copper alloy	2	Unclear	Unclear	Unpublished	UM reg. nos. 61-14-444, 61-14-461
Tel Beth-Shemesh	Silver?	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-454
Tel Beth-Shemesh	Copper alloy	1	Room 537	Unclear	Unpublished	UM reg. no. 61-14-457
Tel Beth-Shemesh	Copper alloy	1	Room 353	Unclear	Unpublished	UM reg. no. 61-14-2526
Tel Beth-Shemesh	Copper alloy	1	Room 424	Unclear	Unpublished	UM reg. no. 61-14-2529
Tel Beth-Shemesh	Copper alloy	1	Room 496	Unclear	Unpublished	UM reg. no. 61-14-2533
El-Jib (Gibeon)	Copper alloy?	1	Unclear	Unclear	Unpublished	UM reg. no. 62-30-729

Small Rings Type III.4 – with Attached Cartouche-Shaped Bezel (Fig. 15: 17-18)

Rings with a shank that is round in cross-section, onto which is attached a plain, solid, cartouche-shaped bezel, concave at the back (Boardman 1967a: Group A, pp. 5-7) and whose front is often found engraved with Egyptian hieroglyphs.

This form derives from the solidly-cast Egyptian 'dome' or 'U'-shaped finger-rings of the New Kingdom (Type III.3c Finger-Rings) in which an oval-shaped bezel is a thickened, solid extension of a ring shank. Examples of the latter occur during the 14th century from Deir el-Balaḥ (Dothan 1979: 90: 218, 91: 220) and from the Persian gardens at Akko (Beit-Arieh and Edelstein 1977: fig. 14: 4, pl. 8: 2; Culican 1978: 139, figs. 19-20; see Andrews 1990: fig. 148: f-h).[200] However, the Iron Age II form of this ring has the bezel attached onto a complete ring shank and is not an extension of it. The shank and bezel were cast as one piece or were made of two pieces soldered together.

The combination of a cartouche-shaped bezel atop a round shank with a thin connection between the two is characteristic of the Egyptian 26th Dynasty (Williams 1924: 98-105, pl. 9: 34-37; Wilkinson 1971: 194-195; Andrews 1990: fig. 148: a-b). The Phoenicians probably spread this form throughout the Mediterranean (see Boardman 1967a: 5-7, n. 9). In the eastern Mediterranean, a silver example was found in Tomb 337 at Amathus, dated to the 7th-6th centuries (Laffineur 1992: 12, pl. 3) while from Cyprus and Rhodes come specimens of unknown provenience in electrum and gold with Egyptian hieroglyphs and other decorations intaglio, both of the same period (Myers 1899: no. 4146; Marshall 1907: 4). Such rings are found in Greece in the 7th-6th centuries, to which they probably arrived via Cyprus where they exhibit a range of Phoenician, Egyptian or Greek motifs upon the bezel (Boardman 1967a: 6-7). This type also occurs in Italy (Etrusca) during the 7th-6th centuries, though in slightly modified form (Boardman 1967a: 7-16).

Further west, close parallels in silver and gold occur at Tharros, dated to the 7th-6th centuries (Pisano 1974: figs. 3: 110, 10: 288, 290, 11: 291-298, 12: 299, 324; Pisano 1987: 139; pl. 80: 4/22). Other parallels in gold at Carthage are of the same date (Quillard 1979: pl. 16: 268-270). Examples in gold from Cadiz, Tombs 11 and 17, are dated somewhat later, to the 6th-5th centuries as are specimens in silver from Tomb 1-E, dated to the 5th-4th centuries (Perdigones Moreno et al. 1990: figs. 35: 5, 36: 2, 38: 22; see Culican 1978: 547 for further references). This type of ring in silver with hieroglyphs is also found as far as Bahrain in the Persian Gulf (Krauss, Lombard and Potts 1983: 162-163).

Though only a few examples are known from the southern Levant itself, the large number of dated parallels throughout the Mediterranean firmly affixes this form as characteristic of Phoenician jewelry of the 7th-5th centuries (Pisano 1987: 84). Culican (1978: 547) has noted: "there can be little doubt that [this] shape [was] transmitted from Phoenicia, especially since in the Phoenician west they were current in the earliest cemeteries".

The bezel on one of the Tel Miqne-Ekron rings (Fig. 15: 17) is decorated with Egyptian hieroglyphs in intaglio. While the reading of these hieroglyphs is not yet clear, the inscription: (?)*sm3 w3d s3 Hr(?) m.h3t*, appears to end in a personal name, indicating a meaningful text or an unsuccessful copy of one. Meaningless, possibly amuletic

[200] In Egypt, such 'stirrup' rings are found in use during the Ptolmaic period as well (Andrews 1990: fig. 148: h) though locally, no examples later than the Iron Age I are known so far.

hieroglyphic sequences are a characteristic shared by many rings found outside of Egypt (Boardman 1967a: 6; Krauss, Lombard and Potts 1983: 162-163) implying a non-Egyptian or possibly Phoenician origin for this ring. However, the form is typical of 26th Dynasty rings found in Egypt and the hieroglyphs may be an abbreviated title used by Egyptian priests, suggesting that this ring was manufactured in Egypt or is based on an Egyptian model (Brandl, pers. comm.).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Sidon	Silver	3	Tomb 213	7th-6th c.	Culican 1978: figs. 14-16; Saidah 1983: pl. 54: 1	Some of the rings with unintelligible Egyptian hieroglyphs.
Tel Miqne-Ekron	Silver	2	Stratum IB	7th c.	Golani and Sass 1998: 68, 70, fig. 13: 4	One blank and one inscribed bezel. From sealed hoards.
Tel Ḥarasim	Copper alloy	1	Topsoil	---	Karon 1992: fig. 17: 3	With Egyptian hieroglyphs. Probably originating from Iron Age II Stratum IV.

Small Rings Type III.5 – with Widened, Flattened Ends Holding a Mount (Fig. 15: 19-22)
Bezel rings with plano-convex shank and terminals that widen out to bear a lotus, palmette or papyrus flower decoration in relief. The ends were flattened by beating into a mold, creating the relief decoration on one side while the other is flat. The terminals of the shank usually hold a mounted scarab or other form of flattened bezel.

The ring in Fig. 15: 19 is open and lacks a bezel, which may have fallen off. The terminals of this ring bear a palmette decoration in relief.[201] The ring in Fig. 15: 20 bears a silver mount holding a perforated faience scarab, with two hieroglyphs that depict the front part of a crouching lion and a solar disk that may be read as <u>*h3t*</u> and <u>*r`*</u>.[202]

The ring depicted in Fig. 15: 21 is similar in general form and construction to the examples above, but the ends are thicker and exhibit an incised lotus or papyrus flower motif. The mount on this object is made of one piece of silver plate with a shallow raised rim held by the two terminals of the shank. Upon the plate is an incised depiction of a fish swimming to the right. The fish motif on rings is not common. Golden specimens occur at Tomb 18 at Late Bronze Age Enkomi, dated to the Late Cypriot II period (Gjerstad et al. 1934: pl. 88: 5) and another from Tell el-Farʿah (S) is dated to the 13th-12th centuries (Starkey and Harding 1932: pl. 51: upper right; 53: 199). A depiction of a fish on a solid gold ring has recently been found in a hoard of gold and silver jewelry from Megiddo, dated to the 11th c. (E. Arie, pers. comm. and see above n. 93). Depictions of fish on the backs of scarabs commonly appear during the Late Bronze Age (Rowe 1936: no. 68, 597, 783, S. 31, S. 50, S. 69, S. 69A, S. 70), but the use of a fish motif during the Iron Age I-II is uncommon.[203]

The ring depicted in Fig. 15: 22 has a solid metal bezel with an engraved rosette decoration[204] surrounded by a raised, oval-shaped border. Two golden rings of unknown provenance, but probably datable on stylistic grounds to the Iron Age II, are similar in construction. These have lotus flower or papyrus terminals holding a metal bezel mount with an oval rosette in relief identical to the ring in Fig. 15: 23 (Marshall 1907: 146, no. 899) or holding an amazonite stone seal (Ben-Dor 1947: 64-66). Of similar concept, but made of blue faience, is a ring with two lotus blossom terminals holding a scarab bezel.[205] Allegedly originating in Egypt, this ring is of unknown date (Canby 1979: 46, no. 128; Eaton-Krauss 1982: 249, no. 347).

Two additional rings, though poorly documented, originate from sifted deposits at the entrance to a looted 7th century tomb near Amman (Tomb of Adoni-Nur). The first ring is made of silver shank terminating in lotus blossoms that support a circular bezel, in which remain traces of a missing glass inset. Around the mount is a row of granules. The second ring is made of a round silver shank, the terminals ending in two large granules (petals?) that hold an oval-shaped thick silver mount, within which is a seal of lapis lazuli with a possible engraving of a seated feline.

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201 Numerous variations of the palmette decoration are well-known and very popular throughout the Phoenician world. This motif, in a somewhat similar decorative role, occurs on a palmette pendant from Cyprus, also dated to the 7th-6th centuries (Pierides 1971: 27, pl. 14: 6).

202 The arrangement of these two hieroglyphs is highly reminiscent of 26th Dynasty scarabs of Psamtek (Psamethichos I) who ruled during the 7th century that feature a complete crouching lion and solar disk (e.g., Petrie 1917: pl. 55: 3-8). The design found in the present scarab, showing only the forward half of a crouching lion and solar disk may be an abbreviated form of the pharaoh's name or a local rendition, possibly referring to a local prince, as suggested by the Egyptian ideogram of the forward portion of the crouching lion (Gardiner 1988: 621).

203 Depictions of fish in local 1st millennium glyptics are rare, as in an example from Nahal Isasschar (see Ornan 1997: 212-213; Cat. no. 5).

204 The rosette decoration on the bezel of a Type III.8a Small Ring also occurs during the Persian period, as at Tel Michal (see Muhly and Muhly 1989: fig. 25.10: 175).

205 Of nearly identical form but larger, is a gold bracelet with two terminals depicting lotus or papyrus flowers holding a swiveling lapis lazuli scarab set in a gold mount with braided decoration, dated to 9th century (Andrews 1990: 147, fig. 130).

A gold ring from the Harvard excavations at Samaria also bears lotus terminals supporting a scarab on a swivel mount (see also below Type III.6a Finger-Rings; Fig. 15: 22-28).

Silver finger-rings with flattened terminals, though undecorated, are also found at Tharros (Pisano 1987: 84, Type IId, pl. 40: e), where they date to the 7^{th}-6^{th} centuries, as do all the examples from the southern Levant and Jordan.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	5	Stratum IB	7^{th} c.	Golani and Sass 1998: 70, fig. 13: 5	Four examples from sealed hoards
Tomb of Adoni-Nur	Silver	1	Tomb	7^{th} c.	Harding 1953b: pl. 7: 12	Missing glass inset. Poor documentation. Excavator's dating.
Tomb of Adoni-Nur	Silver and Lapis Lazuli	1	Tomb	7^{th} c.	Harding 1953b: pl. 6: 9; 7: 9	Poor documentation.
Samaria	Gold	1	Unclear	8^{th}? c.	Reisner, Fisher and Lyon 1924: pl. 56: d	Lotus terminals holding a scarab in gold mount. Terminals decorated with wound-wire. Proposed dating on stylistic grounds.

Small Rings Type III.6a – with Swivel Bezel Mount and Scarab (Fig. 15: 23-28)

Finger-rings with a round shank, the terminals of which are often decorated with wound-wire. The shank may be made of gold, electrum, silver or copper alloy. The terminals of the shank hold a bezel usually consisting of a faience or stone scarab, occasionally set in a metal mount. A perforation running through the central longitudinal axis of the scarab held it in place by a wire running between the terminals of the shank. This arrangement enables the scarab to be turned on its axis, hence the term 'swivel'.[206]

These rings are personal seals and are also termed 'signet rings'. The scarabs often contain royal or administrative titles or symbols, indicating that they were employed as insignia or seals of office and authority (see below Part II, sect. 7.2.6.).[207] However, many of the scarabs in such rings are blank, suggesting that in some cases, the ring itself with the form of the scarab, and not necessarily the seal itself, were of importance.

Such rings first appear in the Egyptian Middle Kingdom (Wilkinson 1971: 76; Andrews 1990: 163-164), reaching the southern Levant at the same time (Middle Bronze Age II). They continue into the Late Bronze and Iron Age, later spread westwards by the Phoenicians during the Iron Age II and continuing in use into the Persian period (see Rowe 1936; Aldred 1971: 160-161; Platt 1972: 75ff.; Keel 1995: 105ff.). Most are associated with the Late Bronze and Iron Age I, when this form of ring was very common, the shanks and the mounts sometimes decorated with wire and granules (Guy 1938: fig. 176). Though Late Bronze examples may be quite elaborate, the Iron Age II forms are generally simpler in construction, many of them lacking a mount for the scarab or a wound-wire decoration at the terminals of the shank. The table below presents only examples of the Iron Age II.

Most scholarly interest concerning these rings has naturally focused on the scarabs within them (e.g., Rowe 1936; Keel 1995). Little or no attention has been given to the ring as a whole and blank scaraboids, when found, are often overlooked. These also functioned as beads (Stone Bead Types II.12 and III.10; Figs. 31: 1-2, 32: 38-39), when no ring is forthcoming, indicating that the form itself was of some significance. As for the ring, the shank may be thin (e.g., Fig. 15: 23-25, 27-28) or thick (Fig. 15: 26), fluted (Fig. 15: 29) or square (Shalev and Sari 2006: fig. 8: 2). There are numerous modes for the manner in which the scarab and mount (if found) are attached to the ring (see Aldred 1971: 160-161). This may be achieved in one of the following ways: a) One or both ends of the tapering shank are made into thin wire, which may be threaded through the perforation of the scarab in one or two opposing directions, the extruded ends then wound around the terminals of the shank in decorative fashion b) The terminals of the shank end in a perforation; either a cast 'eye' (as in a needle), a formed loop (the ends simply bent back) or even a puncture in the flattened terminal of the shank; the wire holding the shank then being strung between these two terminals. As Type III.6a Finger-Rings were produced over a long period, it may be that different techniques were in practice in different periods and in different areas. This raises the possibility of identifying specific workshops. Though no clear patterns are readily apparent, this may be a promising avenue of research that is beyond the scope of this study.[208]

[206] Many rings of this type are lacking the mount and scarab as the wire often corrodes away.
[207] Many more scarabs are individually found than those mounted on a ring.
[208] One of the major problems in such a study is the level of detail found in the publications. In many cases, the metallic components of these rings are heavily corroded, so that even the most cautious cleaning and restoration procedure is still not enough to reveal the specific technical aspects of the manufacturing process.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Silver, Electrum and Faience	1	Tomb L23B	5th-4th c.	Johns 1933: pl. 31: 831	Blank scaraboid. Excavator's dating.
Lachish	Copper alloy and Feldspar	1	Tomb 106	7th-6th c.	Tufnell 1953: pl. 54: 15	Wound-wire on terminals of shank. Blank scaraboid. Excavator's dating.
Tel Malḥata	Unclear	1	Unclear	7th-6th c.	Beit-Arieh 1994: fig. 127	With depiction of ibex.
Akhziv cemetery	Silver and Carnelian	2	Tomb T.A. 72	9th-4th c.	Mazar 2001: fig. 65: 23-24	Mixed tomb.
Akhziv cemetery	Carnelian and Gold	1	Tomb T.A. 73	9th c.	Mazar 2001: fig. 43: 10	---
Akhziv cemetery	Silver and Green jasper	1	Tomb ZX	10th-8th c.	Dayagi-Mendels 2002: fig. 3.9: 31	Blank scaraboid. Dating according to Dayagi-Mendels.

Small Rings Type III.6b – with Swivel Bezel of Solid Metal Scaraboid (Fig. 15: 30-31)
A ring with round shank that tapers off or is flattened at both ends to hold a solid metal scaraboid, usually strung on a wire held between the two ends of the shank. In this arrangement, the scaraboid portion of the ring is firmly secured to the shank and may also be turned on its axis or swiveled. The depictions on the scaraboid were produced by incising or engraving, or they may have been formed during casting of the scaraboid itself.

Similar in concept to Type III.6a rings described above, this form features a solid metal scaraboid instead of the usual faience or stone, but appearing without a mount. The ring from Tel Miqne-Ekron (Fig. 15: 30) features a shank decorated by wound-wire at the ends of two tapering terminals. The wound-wire may have been the continuation of the wire strung through the metal scaraboid, but much of this area of the ring is corroded. Upon the scaraboid is a schematic depiction of a horned quadruped facing to the right, standing upon a line that separates it from a parallel row of five dots. To the right of the animal is a small plano-convex depression, depicted on its short side. The other side of the scaraboid is blank.

The ring from Tel Beth-Shemesh (Fig. 15: 31) features a shank whose ends have been flattened and pierced, the wire running through the scaraboid was inserted through the holes to hold the scaraboid in place and then possibly flattened, in rivet fashion, or bent, in order to secure it to the terminals of the shank. The scaraboid bears a schematic depiction of an animal running to the right, possibly a horse; though a straight and vertical protrusion (a horn?) extends from the head. Atop the animal is a sitting rider, depicted with two outstretched arms, their size grossly exaggerated. The other side of the scaraboid is blank.

The ring from Tell el-Ḥesi, is corroded and it is unclear whether it bears a swiveling metal scaraboid or a bezel. The ring from Arad, though lacking a clear context, is probably to be dated to the latter half of the Iron Age II on the basis of the dated parallels for this type.

Type III.6b Small Rings are rare; the few extant examples from archeological excavations all date to the end of the Iron Age, possibly continuing into the Persian period. The use of scaraboid seals of metal on finger-rings appears to be a late Iron Age and Persian period phenomenon[209] and many of these bear a decoration of a horned quadruped (e.g., from Kamid el-Loz see Adler 1994: fig. 19). Non-metallic scaraboids and seals depicting horned quadrupeds are relatively common in the late Iron Age (see for example at Lachish, Tufnell 1953: pls. 44: 78-101; 45: 147-148) and continue into the Persian period, as on a scaraboid from Tell el-Mazar (Yassine 1984: 108-109, fig. 55: 187). A depiction of a horned animal on the underside of a Type III.6a ring, though not in metal, is found at Tel Malḥata, dated to the late Iron Age (Fig. 15: 28).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Ḥesi	Copper alloy	1	Stratum VD	6th-5th c.	Bennet and Blakely 1989: fig. 217: 6	Corroded.
Tel Miqne-Ekron	Copper alloy	1	Stratum IC	7th c.	Golani 1996a: fig. 11: 4	With a depiction of horned quadruped.
Arad	Copper alloy	1	Unclear	Prob. 8th-7th c.	Unpublished	IAA reg. no. 1967-975.

209 Two additional swivel bezel rings with a bronze scaraboid seal are known. One bears a two-line inscription on one side (the 'seal of Gaddiyahu') and an incised depiction of a horned quadruped with a human figure balancing upon it on the other side (Avigad 1989: 8; Avigad and Sass 1997: 87, no. 118). The other bears an inscription "Ahiyahu (Ben) Shem" (Hestrin and Dayagi-Mendels 1978: 108; Avigad and Sass 1997: 69, no. 55). Both may probably be associated with the late Iron Age but their lack of provenance makes their authenticity suspect. An additional ring, also of unknown provenance, bears the inscription [belonging to] *Natan* [son of] *m's* (Avigad and Sass 1997: 131, no. 276).

Tel Beth-Shemesh (new excavations)	Copper alloy	2	Level 2	8th c.	Golani forthcoming C	One complete, the other is missing the scaraboid.

Small Rings Type III.7 – Multi-Stranded (Fig. 16: 1-3)

Rings made of several lengths of plain, twisted or braided wire arranged side by side to form a flat ribbon.

The technique of combining twisted and plain wire in ribbon form for the construction of rings is known in the Late Cypriot I period at Enkomi (Tomb 13), where it is used in the production of a gold earring (Gjerstad et al. 1934: pl. 81: 217). In the southern Levant, parallels for the construction of a ring from braided and plain wires appear later in the 13th century such at Lachish and Tell es-Saʿidiyeh.[210] From the latter site, a peculiar technique involves use of iron wire, rarely found in the construction of finger-rings, flanked by two copper alloy wires. The multi-stranded technique also occurs in a silver example from the Phoenician necropolis at the Ain Dalhia Kebira in the region of Tangier, dated to the 5th century (Ponsich 1967: pl. 27, fig. 34).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 23: 155	Partial. Excavator's dating. Probably heirloom from 7th-6th c.
Eshtemoʿa	Silver	1	From hoard	10th c.	Yeivin 1990: fig. 17: 6	Partial.
Akhziv cemetery	Gold	1	Tomb T.C.4	11th-10th c.	Mazar 2001: fig. 18: 3	Two straight wires flanking two braided ones.
Lachish	Gold	1	Pit 556	13th c.	Tufnell 1958: pl. 25: 38	Identified as an earring. Excavator's dating.
Tell es-Saʿidiyeh	Copper alloy, Iron	3	Tomb 123	13th c.	Pritchard 1980: fig. 27: 16	Iron wire flanked by copper alloy wires.

Small Rings Type III.7a – Multi-Stranded with Knot (Fig. 16: 4-6)

Rings made of two lengths of plain or twisted wire, each bent 180º to form a four-stranded ribbon. The ribbon forms a loop at one end, into which is inserted the other end, terminating in a knot.

This distinctive form and manufacturing technique was used in the Late Iron Age II and Persian periods. The concept of wire knots as part of a ring construction (see above Type I.2b Small Rings; Fig. 15: 6-8) is known from the Phoenician necropolis at Tharros, dated to the 7th-6th centuries (Pisano 1987: 82, pls. 39c, 44k) and from the Phoenician necropolis of El Molar in Spain dated to the 5th century (Monraval Sapiña 1992: 107, no. 156). The examples of the multi-stranded form with a knot from ʿAtlit and Akhziv clearly link this form with the Phoenicians. Phoenician jewelers must certainly have adopted or invented this technique.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Gold	1	Tomb L21	5th-4th c.	Johns 1933: 54, pl. 23: 557	Mixed tomb. LB and Iron Age remains also present. Excavator's dating.
ʿAtlit	Gold	1	Tomb L23B	5th-4th c.	Johns 1933: 54, pl. 31: 826	With two strands and knot. Excavator's dating.
Tel Miqne-Ekron	Silver	2	Stratum IB	7th c.	Golani and Sass 1998: 68, 70, fig. 13: 6; Golani 1996a: 50-52, fig. 11: 5	From sealed hoards. One example partial, the other complete.
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 3	9th-7th c.	Mazar 2004: fig. 25: 12	With two strands and knot.
Gezer	Copper alloy	1	Unclear	Unclear	Macalister 1912c: pl. 135: 28	---

Small Rings Type III.7b – Multi-Stranded with Cloisonée Bezel (Fig. 16: 7)

A unique ring from Meqabelein with multi-stranded shank made of five wire stands arranged next to one another with granular decoration arranged along some of the strands. The bezel, attached to the shank by three large granules on

[210] For examples from the Early Dynastic period in Mesopotamia, see Maxwell-Hyslop 1971: 13-14, pl. 11a-b.

each side, is in the form of a flower executed in *cloisonée* that highlights the petals and the center of the flower. The inlay, which could have been of glass, frit or stone, is missing.

This ring, while exhibiting common late Iron Age constructional and decorative techniques, is unique in its use of a *cloisonée* bezel. Though use of the *cloisonée* technique is one of the characteristics of Egyptian jewelry, it is uncommon in the southern Levant, even at the peak of Egyptian cultural influence during the Late Bronze Age. The *cloisonée* technique does appear in some Neo-Assyrian creations (Damerji 1999: pls. 30, 42-45) and may possibly be the product of Syro-Palestinian or even Egyptian craftsmen. The *cloisonée* flower upon the ring is paralleled with a similar silver mount upon an Achamaenean bracelet, flanked on two sides by goat heads (Rehm 1992: abb. 57m C.1).[211]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Meqabelein	Silver	1	Tomb	7th-6th c.	Harding 1950: pl. 15: 6	Excavator's dating.

Small Rings Type III.8a – with Flattened Oval-Shaped Bezel – Metal (Fig. 16: 8-14)

Finger-rings made of a simple metal hoop with an oval-shaped bezel bearing an engraved or incised decoration. The generalized oval form may also appear as a leaf of diamond shape. These rings were probably made by flattening a portion of a round shank into bezel form or by casting (Boardman 1967a: Type N, 25-27).[212]

This type has some general affinities to Type III.3c Finger-Rings with Oval-Shaped Bezel-Metal ('Dome' or 'Stirrup' rings). The latter form is typical of the Late Bronze and Iron Age I only and is typically cast, producing a rather massive appearance. Type III.8a rings are much thinner, the bezel formed by hammering out a portion of the ring shank into an oval form.

This type begins during the Late Bronze Age in silver, gold and copper alloy, yet is especially common in the Persian period. Iron examples are found during the Iron Age II but appear more often during the Late Iron Age II and into the Persian period, where some, such as two examples from ʿAtlit, are made of iron with silver plating. An example from Tel Michal, dated to the Persian period, is a small finger-ring of copper alloy, probably of a child, wherein a wire was flattened at its center to produce the bezel; the two ends of the wire were then bent around to form the shank and joined by twisting at the end opposite the bezel.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Copper alloy	1	Unclear	5th-4th c.	Shalev and Sari 2006: fig. 8: 1	Blank bezel.
Modiʿin	Iron	3	Burial cave 16	5th-4th c.	Brandl 2012	One blank, other with lion protome.
Modiʿin	Copper alloy	1	Burial cave 16	5th-4th c.	Brandl 2012	With depiction of ibexes.
ʿAtlit	Iron with Silver plating	2	Tomb L20	5th-4th c.	Johns 1933: pl. 37: 509, 563	Corroded. Excavator's dating.
ʿAtlit	Iron	1	Tomb L24	5th-4th c.	Johns 1933: pl. 37: 936	Corroded. Excavator's dating.
ʿAtlit	Gold	1	Tomb L23	5th-4th c.	Johns 1933: pl. 27: 713	With engraved depiction of human. Excavator's dating.
En Gedi, Morinaga Cave	Copper alloy?	1	Burial cave	6th-4th c.	Shai, Porath and Eshel 2007: fig. 3: 2-3	---
Tel Michal	Copper alloy	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig. 25.10: 173	With 'sword-shaped' mark intaglio.
Tel Michal	Silver	1	Stratum VI	6th-4th c.	Muhly and Muhly 1989: fig. 25.10: 174	With intaglio depiction of figure seated on throne.
Tel Michal	Silver	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig. 25.10: 175	With intaglio rosette decoration.
Kamid el-Loz	Silver	1	Grave 128	6th-4th c.	Hachmann and Penner 1999: pl. 26: 12, 24: 7	With depiction of quadruped.

[211] A similar flower design, executed in openwork and decorating the top of a small gold pin is known from Urartu, dated to the 9th-7th centuries (Piotrovskii 1967: 56, fig. 37).

[212] Brandl's (2012) description of three iron rings from Modiʿin, asserts their manufacture by casting, improbable for such small objects in iron, that were more probably hammered into shape and not cast. A recent XRF analysis of these rings has authenticated that they were made of iron (Brandl, pers. comm).

Kamid el-Loz	Copper alloy	1	Grave 128	6^{th}-4^{th} c.	Hachmann and Penner 1999: pl. 26: 13	Blank bezel.
Kamid el-Loz	Copper alloy	1	Grave 15	6^{th}-4^{th} c.	Hachmann and Penner 1999: pl. 26: 4	Blank bezel.
Ketef Hinnom	Iron	3	Tomb 25	6^{th} c.	Barkay 1986: 33 (Hebrew)	---
Palmaḥim	Copper alloy	1	Tomb 28	7^{th}-5^{th} c.	Singer-Avitz and Levy 1994: fig. 4: 15	Blank bezel.
Lachish	Iron	1	Tomb 106	7^{th}-6^{th} c.	Tufnell 1953: pl. 54: 14	Blank bezel. Partial. Excavator's dating.
Lachish	Silver	2	Tomb 106	7^{th}-6^{th} c.	Tufnell 1953: pl. 54: 13	Blank bezel. Partial. Excavator's dating.
Kadesh Barnea	Copper alloy(?)	1	Stratum 3c	8^{th} c.	Gera 2007: fig. 13.6: 9; pl.13.6: 9	Corroded. Blank(?) bezel.
Tel Ḥalif	Iron	1	Tomb 20	9^{th}-8^{th} c.	Borowski 1994: fig. 7: 19	Partial. Blank bezel.
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 3	9^{th}-7^{th} c.	Mazar 2004: fig. 25: 17	With depiction of Horus eye and mountains(?).
Tel Jemmeh	Copper alloy	1	Unclear	9^{th} c.	Petrie 1928: pl. 20: 58	Partial. Blank bezel. Excavator's dating.
el-Jib (Gibeon)	Copper alloy	1	Tomb 3a	11^{th}-10^{th} c.	Pritchard 1963: fig. 6: 21	Corroded. UM reg. no. 62-30-177
Megiddo	Copper alloy	1	Stratum VII	12^{th} c.	Loud 1948: pl. 224: 11	Corroded. Non-distinctive design. Dating according to Mazar 2008.
Lachish	Silver	1	Pit 538	13^{th} c.	Tufnell 1958: pl. 25: 50	Blank bezel. Excavator's dating.
Tell el-Farʿah (S)	Silver	1	Tomb 934	13^{th}-12^{th} c.	Starkey and Harding 1932: pl. 51: upper right; 53: 190	With geometric design. Dating according to Laemmel 2003: Table 6.
Tell el-Farʿah (S)	Gold	1	Tomb 934	13^{th}-12^{th} c.	Starkey and Harding 1932: pl. 51: upper right; 53: 199	With incised depiction of fish swimming to left. Dating according to Laemmel 2003: Table 6.
Lachish	Silver	1	Pit 538	13^{th} c.	Tufnell 1958: pl. 25: 50	Blank bezel. Excavator's dating.
Tell el-Farʿah (S)	Gold	1	Tomb 922	13^{th} c.	Starkey and Harding 1932: pl. 49: 922	Bezel with incised geometric design. From a single-period burial. Dating according to Laemmel 2003: Table 6.
Tel Beth-Shemesh	Gold	1	Stratum IV	14^{th}-13^{th} c.	Grant 1932: pl. 49: 4	From jewelry hoard.[213] Depiction of goat intaglio. See Tadmor and Misch-Brandl 1980.
Tel Beth-Shemesh	Copper alloy	1	Stratum IV	14^{th}-13^{th} c.	Unpublished	Bezel bears incised criss-crossed lines. From jewelry hoard. UM reg. no. 61-14-700
Tel Beth-Shemesh	Copper alloy	2	Unclear	Unclear	Unpublished	Bezel of both rings bears incised depictions. From jewelry hoard. UM reg. no. 61-14-1089, 61-14-472
Gezer	Copper alloy	1	Unclear	Unclear	Macalister 1912c: pl. 135: 26	---
Tell Jemmeh	Copper alloy	1	Unclear	Unclear	Golani forthcoming E	Bezel only, corroded.

[213] This object originates from a hoard of Late Bronze Age gold jewelry found at the site (Tadmor and Misch-Brandl 1980). Another gold ring, also with an oval-shaped bezel (Grant 1932: pl. 49: 6) though of a different constructional technique, originates from the same hoard but appears out of place in the repertoire of Late Bronze Age finger-rings and is more likely an intrusive object of Byzantine or Islamic date.

Small Rings Type III.9a – with Rectangular-Shaped Bezel (Fig. 16: 15-17)

Rings with round shank, upon which is soldered a flat bezel of rectangular form. Some of these rings may bear an added decoration of two volutes on the terminals of the shank.

Appearing in silver, copper alloy and even iron, this type is associated with the Persian period though it may also appear at the end of the Iron Age II. The form begins in Egypt during the 18th Dynasty (Williams 1924: 90-91, pl. 8: 26). The Phoenicians apparently diffused this type, found throughout the Mediterranean basin from the 7th-6th centuries onwards (Pisano 1987: 83-84).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Iron	1	Unclear	5th-4th c.(?)	Johns 1933: pl. 37: 339	Corroded. Excavator's dating.
ʿAtlit	Silver	1	Tomb L21B	5th-4th c.(?)	Johns 1933: pl. 25: 651, fig. 11	Rectangular bezel on volutes of shank terminals. Intaglio decoration of five captives bound together. Excavator's dating.
Tel Shor	Silver	1	Burial	6th-4th c.	Golani forthcoming G	Bezel once had a design, now very corroded.
Tel Michal	Silver	1	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 7: 7	Blank bezel.
Kamid el-Loz	Copper alloy	1	Grave 7	6th-4th c.	Hachmann and Penner 1999: pl. 24: 4, 26: 7	Rectangular bezel on volutes of shank terminals. Depiction of four figures below two stars.[214]
Tel Beth-Shemesh	Copper alloy	1	Unclear	Unclear	Unpublished	Bezel bears engraved decoration of rectangle with inner dividing lines. UM reg. no. 61-14-1088

Small Rings Type III.9b – with Round Bezel (Fig. 16: 18-20)

Finger-rings with round, single or double-stranded shank soldered to a small, circular or slightly oval bezel.

Not a common form, this type occurs throughout the Iron Age II and into the Persian period. The ring and dot motif found on the bezel of the ring from Tell el-Farʿah (S) is a well-known Canaanite motif usually found decorating bone, ivory and ceramics, but rarely metal.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Iron	2	Tomb L23B	5th-4th c.	Johns 1933: pl. 37: 829	Corroded. Excavator's dating.
Tel Michal	Silver	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig. 25.10: 176	With triangles of granules on bezel.
Ketef Hinnom	Silver	1	Tomb 25	7th-5th c.	Barkay 1986: 27	With galloping horseman intaglio.
Megiddo	Silver	1	Stratum II	7th c.	Lamon and Shipton 1939: pl. 86: 8	Corroded. Shank made of two strands. Excavator's dating.
Tell el-Farʿah (S)	Silver	1	Tomb 238	10th-9th c.	Petrie 1930: pl. 42: 308	Six engraved (?) ring and dot motif signs on bezel. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Lachish	Iron	1	Tomb 107	10th-9th c.	Tufnell 1953: pl. 54: 60	Partial. With double-stranded shank. Mixed tomb. Excavator's dating.

Small Rings Type III.10 – Closed Shell Ring (Fig. 17: 1)

Small closed rings cut out of a shell.

A wide variety of shells may be used to create such a ring; either those with enough flat expanse to cut out a ring, or large Conus shells with a thick apex which could have been cut out and polished to produce a ring.

The use of shells for small rings is uncommon, and dates from the Middle Bronze Age. Larger shell rings occur much earlier (Bar-Yosef et al. 1986).

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214 The astral elements depicted on this bezel are typical of local finds dating to the 8th-7th centuries that are usually associated with Ishtar (Ornan 2001b).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Shell	2	Burial cave 4005	10th-6th c.	Tufnell 1953: pl. 57: 43	Found on a finger alongside of a Type III.2a iron finger-ring. Excavator's dating.
Tell Jemmeh	Shell	1	Unclear	17th–16th c.	Golani forthcoming E	---
Shiloh	Shell-mother of pearl	1	Unclear	17th–16th c.	Sass 1993: 268, fig. 10.1: 7	---
Tell el-ʿAjjul	Shell – mother of pearl	1	Unclear	18th-17th c.	Petrie 1931: 8, pl. 23: 2	Excavator's dating.
Tel Beth-Shemesh	Shell	1	Unclear	Unclear	Unpublished	UM reg. no 61-14-578

Small Rings Type III.11 – Plain Closed Annular – Metal (Fig. 17: 2-3)

A simple form made of thick wire, round, oval or semi-circular in cross-section, with ends that are fused or soldered together to form a closed ring.

Most commonly made of copper alloy, this type is also found in silver, gold and rarely, iron, the latter material found in use primarily in the 10th century. In most examples, the join between the two ends is not evident due to corrosion and these may actually represent Type I.1 Small Rings (Fig. 15: 1-3). This latter type is found from the Middle Bronze Age onwards.

Small Rings Type III.11a – Flattened Plain Closed Annular – Metal (Fig. 17: 4)

A variant of the small closed annular ring that features a flattened wire or ribbon joined at both ends to form a band. This type is similar in concept to Type III.2a Finger-Rings (see above and Fig. 15: 12-16), but is closed.

An example from Tel Ashdod, made of thin sheet-gold, is too thin to have withstood everyday wear and use. This object may have covered a ring of more perishable material.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Beth-Shean	Silver	1	Level IV	8th c.	Unpublished	UM reg. no. 31-50-256
Tell el-Farʿah (S)	Copper alloy	1	Tomb 229	10th-9th c.	Petrie 1930: pl. 39: 449	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (N)	Copper alloy	1	Stratum VIIB	11th -10th c.	Chambon 1984: pl. 72: 24	Dating according to Chambon 1984.
Tel Beth-Shean	Silver	1	Level V	11th c.	Unpublished	UM reg. no. 29-108-196
Tel Ashdod	Gold	1	Stratum XII	12th-11th c.	Dothan 1971: pl. 79: 6	---
Tel Beth-Shemesh	Iron	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-115
Tel Beth-Shemesh	Copper alloy	1	Room 416	Unclear	Unpublished	UM reg. no. 61-14-2528
Tel Beth-Shemesh	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-455
Tel Beth-Shemesh	Silver	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-451

7.2.4. Small Rings Type IV – Small Hoop

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
IV	Ring – Small – Hoop	Persian period	Rare – Achaemenid influence	Fig. 17: 5

Small Rings Type IV – Small Hoop (Fig. 17: 5)

A hollow silver tube shaped into a circle. Each end of the circle depicts an animal head, probably a lion, with mouth open wide, from which emerge two small loops resembling forked tongues. A thin silver-copper wire closes the gap between the hoops. At each end of the wire is a small loop that linked to the other two loops at the mouth of the animal head, probably with a small pin or wire.

Rare in the southern Levant, this ring appears to be of Achaemenid inspiration. However, golden examples from Sardis in western Asia Minor, identified as earrings, are dated to the 7th-6th centuries (Densmore Curtis 1925: pl. 7: 5-8) and are probably to be associated with the Phoenicians. Achamaenean earrings and bracelets commonly bear animal finials of lions, bulls, goats or ibexes (Rehm 1992). The present example is too small to have been an armlet or bracelet and the wire between the two terminals, not found in Achaemenid examples, suggests its use as an ear-ring or nose-ring

A similar example but larger, made of 'gilt bronze' from 'Philistine Grave'[215] no. 5 at Gezer (Macalister 1912a: 294, fig. 157: 6, 6a) bears a strong resemblance to the example at Tel ʿIra. The object from Gezer is probably of Persian date and was found on the forearm, probably used as a bracelet.[216] Similar objects, made of a hollow tube with a similar fastening method but with a row of hollow balls positioned around the circumference, have been found at En Gedi, also dated to the Persian period (Shai, Porath and Eshel 2007: fig. 3: 9-10; see Type II.8a Ear-rings, Part II, sect. 7.1.2.).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel ʿIra	Silver	1	Tomb 23	6th c.	Freud 1999: fig. 8: 4	Complete, corroded.

7.2.5. Summary and Discussion – Small Rings Types I–IV

Small rings worn on fingers are less prominent as items of frontal display than are, for example, earrings on the ears or a pendant hung from the neck. Small rings were made from a variety of materials, usually metal, though stone, siliceous materials, shell and bone are also found. Of the metals, the most common was copper alloy. Based on a limited collection of 54 small rings from the 8th–6th centuries from selected sites in the southern Levant, 68% were made of copper alloy, 13% of silver, 15% of iron, 2% of faience and 2% of limestone (Limmer 2007: Chart 6.7).

In addition to their ornamental value, small rings often had significance as signets, seals, or signs of office (see below Part II, sect. 7.2.6.). The significance of plain Small Rings of Type I.1 (Fig. 15: 1-3) is unclear, and they could also have been worn as earrings, nose-rings, hair-rings, finger-rings or toe-rings.

Type II Spiral Rings (Fig. 15: 9-11) had a very long lifespan. The same basic form, with little or no change, oc-curred from the Early Bronze Age to the Persian period. Though commonly regarded as hair-rings, as are Type I Small Rings, Type II may also have been used as nose-, ear- or finger-rings.

Type III Small Rings (Fig. 15: 12-31; Figs. 17, 18: 1-4) are those items assumed to have been exclusively used as finger-rings. Simple varieties, such as Type III.2a Flattened Open-Ended Annular Finger-Rings (Fig. 15: 12-16) and Type III.11 Plain Closed Annular (Fig. 17: 2-4) already appeared during the Middle Bronze Age II or even ear-lier.

It was primarily during the Late Bronze Age that a wider variety of finger-rings began to be produced. Most of them, such as those with bezels bearing inscribed titles or amuletic epithets, are classic examples of signet rings that were primarily of Egyptian inspiration, and possibly also of Egyptian manufacture. Some of these, such as Type III.3a with Cartouche-Shaped Bezel – Siliceous Material, or Types III.3b and III.3c 'Stirrup' Finger-Rings with Oval-Shaped Bezel, in either metal or stone, appeared in the Late Bronze Age and the Iron Age I, but did not continue into the Iron Age II. Derivates of the Type III.3 Egyptian-style Cartouche-Shaped Bezel ring, such as Type III.4 Small Ring with Attached Cartouche-Shaped Bezel (Fig. 15: 17-18), appeared locally only during the latter half of the Iron Age II. Though this form also appeared in Egypt at the same time, many of the bezels upon local examples are blank, and even when inscribed hieroglyphs are present, they are usually unintelligible con-glomerations of signs, possibly of amuletic significance. This suggests that the manufacture and distribution of these rings was attributable to the Phoenicians rather than the Egyptians, and for this reason they occurred through-out the Mediterranean basin, as far east as Bahrain.

The latter portion of the Iron Age II is notable for the appearance of several new ring types, among them Type III.5 Rings with Widened, Flattened Ends Holding a Mount (Fig. 15: 19-22). Although these rings exhibit Egyptian motifs such as lotus and papyrus terminals, and Egyptian manufacturing techniques such as mounted scarabs, these can often be regarded as Egyptianizing or Egyptian-inspired morphological and decorative features, probably em-ployed by Phoenician jewelers, and not necessarily of Egyptian manufacture.

215 Macalister possibly assigns these tombs to the Philistines because a silver pierced mouth-plate similar to examples he was familiar with in Crete was found in one of the burials (Macalister 1912a: 291). The tombs themselves, however, as well as the variety of grave goods they contained, are typical of the Persian period (Stern 1982).

216 Though this object from Gezer is lacking the decoration of animal finials so common in Achamaenian bracelets and in the Tel ʿIra example, the finials of the Gezer ring exhibit a sophisticated closing device made of gold wire (Macalister 1912a: 294).

The ubiquitous Type III.6a Small Ring with Swivel Bezel Mount and Scarab (Fig. 15: 23-28) was an Egyptian invention of the Middle Kingdom, the form and technique being adopted by local jewelers during the Late Bronze Age, if not earlier during the Middle Bronze Age (Keel 1995: 105ff.). These rings exhibit various methods of manufacture, some of which may be particular to a specific period or region. However, a more definitive conclusion requires an in-depth examination of the numerous examples available for study. Type III.6b is a variant exclusive to the late Iron Age II and the Persian period (Fig. 15: 30-31). It features a scaraboid of solid metal instead of the usual faience or stone, and occurred alongside the more common Type III.6a rings.

Type III.7 Multi-Stranded Rings (Fig. 16: 1-3) occurred in the Late Bronze Age, but during the late Iron Age II, specialized forms such as those with a knot (Type III.7a, Fig. 16: 4-7) began to appear. The presence of the latter type mainly at Phoenician sites strongly suggests that it was also a Phoenician innovation of this period.

Finger-rings with a Flattened, Oval-Shaped Bezel in Metal (Type III.8a, Fig. 16: 8-14) also appeared during the Late Bronze Age and became much more common during the late Iron Age II and the Persian period.

Types III.9a and III.9b Small Rings with Rectangular or Round Bezels (Fig. 16: 15-20) also appear to have been an innovation of the late Iron Age II, continuing into the Persian period.

Small Ring Type IV Small Rings (Fig. 17: 5) was a rare form, too large to have been a finger-ring, and too small to have functioned as a bracelet or anklet (see below), except perhaps for a child. Like Small Ring Types I and II, Type IV small rings could easily have been used as an earring or nose-ring.

7.2.6. The Cultural Context of Small Rings in the Iron Age II

Small rings (less than 3 cm in diameter) were usually not depicted in artistic representations. Signet rings, especially those with a scarab mount that functioned as seals, were common throughout the Iron Age, beginning in the Middle Bronze Age II. Signet or seal rings are represented in Egyptian depictions of New Kingdom noblemen or officials, as in the tomb of Tutanakhamun (Keel 1995: figs. 212-214), though these may be slightly oversized to accentuate their presence. The same forms were found in the Late Bronze Age, as at Deir el-Balaḥ (e.g., Dothan 1978: fig. 219) and at the end of the Iron Age I, as in Tomb 110 of the 11th century at Tell el-Farʿah (S) (Petrie 1930: pl. 35: 402). Signet rings with a seal were official rings of administrative power (usually worn by men) (Keel 1995: 113-115).

Small, simple rings in burials are rarely found *in situ*. Type I.1 Small Rings of made of copper alloy (see above 7.2.1, Fig. 15: 1-3), have been found on the fingers of an adult skeleton from a Middle Bronze Age II burial at Megiddo (Loud 1948: fig. 342), and on the fingers of skeletons of young women in Cyprus dating to the Late Bronze Age (Goring 1996: 30-32). They have also been identified on finger bones in an Iron Age I burial near Nazareth (Alexandre 2003: 186-187) and their placement on toes of children as well as adults has also been noted, as in Tombs 222 and 226 at Tell el-Farʿah (S) dated to the 10th–9th centuries (Petrie 1930: 11-12). A Type III.6a Finger-Ring (Fig. 15: 23-29) was found upon the index finger of the right hand of an Egyptian mummy from the Persian or Ptolmaic period (Williams 1924: pl. 7: 23a).

Signet rings were usually associated with men, apparently a symbol of title and authority, though their discovery in burial contexts may indicate an apotropaic function as well, at least in the afterlife, possibly transferred from their use in everyday life.

7.3. Large Rings

Large rings are differentiated from small rings based on size and probable function. Though their use as earrings or hair-rings is possible, most large rings were more likely bracelets, armlets or anklets. Except for children's jewelry which is expected to be smaller, a diameter of over 7.5 centimeters has been suggested as the dividing point between anklets and bracelets (Moorey 1980: 74).

Large rings are often described as ‘bangles’ (Tufnell 1953; Platt 1972), a generalized term that may refer to armlets, anklets and bracelets. If not associated with skeletal remains (see below Part II, sect. 7.3.4.), anklets are nearly identical in form to bracelets, except that the former often have slightly larger apertures and thicknesses. During the Iron Age II in the southern Levant, large rings are relatively common in tombs and habitational levels, appearing in a limited number of forms and techniques. Bloch-Smith has noted that large rings are the most common form of metal jewelry in Iron Age burials (1992: 82), while Brody and Friedman (2007) have suggested that many of these large rings may be expressions of wealth based on an exchange standard. These large rings are most often made of copper alloy, but iron, gold and silver examples are also common. The size and weight of these rings is not necessarily indicative of the specific manner in which they were worn. In comment on the contents of Tomb

54 at Tell en-Naṣbeh, McCown noted that in several cases "bronze bracelets so heavy [were found] that they would have been taken for anklets had they not been found on arm bones" (McCown 1947: 82). According to Tufnell (1959: 52), the custom of wearing solid large rings on the ankles appears to have originated in the area of northern Iran sometime during the 3rd millennium. However, the use of anklets, as well as armlets and bracelets, appears to have been in practice at least from the middle of the 5th millennium, as is evident by the gold finds from the Chalcolithic cemetery at Varna (Misch-Brandl and Ivanov 1994).

7.3.1. Large Rings Type I – Open

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
I.1	with Tapered Terminals and Semicircular or Square Section	Intermediate Bronze Age onwards	Common	Fig. 18: 1-2
I.2	with Tapered Terminals and Round Section	Intermediate Bronze Age onwards	Very common	Fig. 18: 3-5
I.3	with Twisted Wire	Iron Age II – Persian	Common	Fig. 19: 1-5
I.4	with Catch	Iron Age II	Rare	Fig. 18: 1
I.5	with Squared Terminals and Semicircular or Square Section	Iron Age II	Common	Fig. 20: 2-3
I.6	with Squared Terminals and Round Section	Late Bronze – Persian	Common	Fig. 20: 4-5
I.7	with Flat Section (Ribbon-shaped)	Unclear	Rare	---
I.8	with Round Section and Flattened Flaring Terminals	Unclear	Rare	---

The present typology differentiates between large rings primarily by variations in their manufacturing technique. It is assumed that rings with a semicircular cross-section were probably made by casting or hot forging the metal into an open mold with a gouged-out channel, thus leaving one side flat. Rings with a circular cross-section may have been made in a closed mold or the wire was hammered into circular shape. All these techniques may have been in use during the Iron Age II though none of them has yet been identified with certainty.

Large Rings Type I.1 – with Tapered Terminals and Semicircular or Square Section (Fig. 18: 1-2)
Thickened wire rings with semicircular cross-section and open, tapering ends. Such rings may have been cast or hammered into shape and are usually made of copper alloy. The semicircular section may have been a result of casting in an open or closed mold, or hammering a thick wire into an open mold with a semicircular channel, then removing the flattened wire and bending into shape.

Large Rings Type I.2 – with Tapered Terminals and Round Section (Fig. 18: 3-4)
Large rings, usually massive, with round section and open tapering ends. These rings were cast or hammered into shape.

Made of simple thick wire with tapering ends, this form is the simplest and most common of all the large rings. They are common in copper alloy while iron examples begin to appear at the very end of the Late Bronze and beginning of the Iron Age I such as at Tomb C1 at Tell ʿEitun (Edelstein and Aurant 1992: fig. 13: 18-22) and Tomb 219B at Beth Shean (Oren 1973: fig. 49: 2).

During the Iron Age II and into the Persian period, a few examples appear with a decoration of incised rings near the terminals, e.g. at Lachish Burial Cave 4005 (Tufnell 1953: pl. 57: 46), Et-Taiyiba Tomb 6 (Yannai 2002: fig. 10: 9, 11, 13, 14) and Tell el-Farʿah (S) Tomb 700 (Petrie 1930: pl. 48: 574). At the very end of the Iron Age II and especially during the Persian period, large rings with animal heads begin to appear, as at Kamid el-Loz (Hachmann and Penner 1999: pl. 20: 1-13). These are an Achamaenean-inspired phenomenon that commonly includes depictions of lions, rams, ibexes and bulls (Rehm 1992: Abb.1-53).

Large Rings Type I.3 – with Twisted Wire (Fig. 19: 1-5)
Large rings made of two to four thin wires twisted together, thus forming a thicker wire ring. The wires themselves may be of round or square section, the latter probably formed by a swaging technique.

The form created by this technique is common throughout the Iron Age II and well into the Persian period. A variant peculiar to the Persian period features wires of copper alloy and iron wound around a thicker wire core of copper alloy. Some of these rings bear a catch device, usually produced by a hook at one of the terminals faced by a loop or hammered and perforated plate at the other.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell es-Sumeriyeh (Lohamei Hagetaot)	Copper alloy and Iron	1	Tomb 10	6^{th}-4^{th} c.	Messika 1996: fig. 4: 4	Three iron wires twisted over a copper alloy core.
Tel Michal	Copper alloy and Iron	1	Tomb 2001	6^{th}-4^{th} c.	Herzog and Levy 1999: fig. 2: 4	One copper alloy and one iron wire twisted over copper alloy core.
Lachish	Copper alloy	1	Level 1	6^{th}-4^{th} c.	Tufnell 1953: pl. 63: 3	Excavator's dating
Tel Michal	Copper alloy	1	Tomb 2005	6^{th}-4^{th} c.	Herzog and Levy 1999: fig. 11: 2	---
Tel Michal	Copper alloy	1	Tomb 2004	6^{th}-4^{th} c.	Herzog and Levy 1999: fig. 3: 9	Partial
Mamilla (Jerusalem)	Copper alloy	1	Tomb 19	6^{th}-4^{th} c.	Reich and Shukroun 1994: 93	---
Lachish	Copper alloy	3	Tomb 106	7^{th}-6^{th} c.	Tufnell 1953: pl. 54: 16, 23, 26	Mixed tomb. Excavator's dating.
Tel Miqne-Ekron	Copper alloy	1	Stratum IB	7^{th} c.	Golani forthcoming A	Partial
Amman	Copper alloy	1	'Ammonite' tomb	8^{th}-4^{th} c.	Hadidi 1987: fig. 7: 21	Mixed tomb
Lachish	Copper alloy	1	Tomb 116	9^{th}-7^{th} c.	Tufnell 1953: pl. 54: 75	Partial. Excavator's dating.
Akhziv cemetery	Copper alloy	1	Tomb ZR II	10^{th}-7^{th} (?) c.	Dayagi-Mendels 2002: fig. 4.1: 12	Mixed tomb
Akhziv cemetery	Copper alloy	1	Tomb ZR XXXIX	10^{th}-9^{th} c.	Dayagi Mendels 2002: fig. 4.28: 11	Partial
Eshtemoʽa	Silver	1	From hoard	10^{th} c.	Yeivin 1990: 23	Partial
Et-Taiyiba	Copper alloy	1	Tomb 6	12^{th}-9^{th} c.	Yannai 2002: fig. 10: 4	---
Megiddo	Copper alloy	1	Surface	Unclear	Lamon and Shipton 1939: pl. 88: 1	---
Tell en-Naṣbeh	Copper alloy	1	Z 25	Unclear	McCown 1947: pl. 112: 5	---
Tel Beth-Shemesh	Copper alloy	1	Room 162	Unclear	Unpublished	UM reg. no. 61-14-418

Large Rings Type I.4 – with Catch (Fig. 20: 1)

Large and massive wire rings made by casting and hammering, with a round cross-section. One end of the ring is flattened into a diamond-shaped point. The other end is flattened to a wide U-shaped plate with upturned ends for holding the opposite, pointed end.

This ring with catch may have been used as anklet or armlet for a large person or even as a torque. The flattened edges of the clasp could have been folded over the terminal pointed end to hold it in place. The available examples, though few, appear to indicate that this form is exclusive to the latter half of the Iron Age II.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Copper alloy	1	Stratum IB	7^{th} c.	Golani 1996a: 54-55, fig. 12: 4	Whole
Megiddo	Copper alloy	1	Stratum IIIb	8^{th}-7^{th} c.	Lamon and Shipton 1939: pl. 87: 8	Partial. Excavator's dating.
Hazor	Copper alloy	1	Stratum VI	8^{th} c.	Yadin et al. 1960: pl. 188: 21	Partial
Tel Beth-Shemesh	Copper alloy	1	From temple foundation	Unclear	Unpublished	Partial. UM reg. no. 61-14-376

Large Rings Type I.5 – with Squared Terminals and Semicircular or Square Section (Fig. 20: 2-3)

Thick rings with a semicircular or square-shaped section and squared-off or cut terminals. These rings were probably cast into an open mold, or a thick wire was forged by heat into a channel gouged into a mold, hence the shape of the section.

These large rings appear to have been indicative of the first half of the Iron Age II; they are lacking in the late Iron Age II and are not found in the Late Bronze Age or Iron Age I.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Copper alloy	10	Tomb 120	8th c.	Tufnell 1953: pl. 55: 2	Mixed tomb. Excavator's dating.
Lachish	Copper alloy	7	Burial cave 1002	8th c.	Tufnell 1953: pl. 57: 20	From thick accumulation of secondary burial deposits within pit. Excavator's dating.
Lachish	Copper alloy	1	Level IVc	9th-8th c.	Sass 2004: fig. 28.17: 4	With incised decoration on terminals. Excavator's dating.
Tell Beit Mirsim	Copper alloy	4	Tomb 500	9t –8th c.	Golani 2004a: fig. 4.1: 4-5	Excavator's dating.
Lachish	Copper alloy	4	Grave 147	9th c.	Tufnell 1953: pls. 36: 58-60; 55: 30	Anklets found one on each leg. Excavator's dating.
Lachish	Copper alloy	18	Tomb 218	10th-9th c.	Tufnell 1953: pls. 40: 4, 6; 55: 35	Excavator's dating.
Tell en-Naṣbeh	Copper alloy	1	Tomb 32	10th-8th c.	McCown 1947: pl. 112: 2	Excavator's dating.
Tel Beth-Shemesh	Copper alloy	19	Tomb 1	10th c.	Mackenzie 1912-1913: pl. 26, 27a: 1	Excavator's dating.
Tel Be'er Sheva	Copper alloy	1	Stratum VII	11th-10th c.	Herzog, Brandfon and Rainey 1984: fig. 25: 8, pl. 14: 10	Corroded
Tel Beth-Shean	Copper alloy	1	Levels III-IV	Hellenistic-Iron Age II	Unpublished	UM reg. no. 29-108-214
El-Jib (Gibeon)	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 62-30-949

Large Rings Type I.6 – with Squared Terminals and Round Section (Fig. 20: 4-5)

Thick rings with a round section and squared off or cut terminals. The rings were cast, then possibly further worked by hammering. One example, originating from the renewed excavations at Tel Beth-Shean (see below) underwent metallurgical analyses that detected a copper alloy with over 10% tin, indicating the production of bronze. This object underwent cycles of mechanical and thermal treatments that included annealing and hammering. Nearly all such rings occur in copper alloy; a few are of silver or iron.

Such rings are common, primarily in tombs, from the end of the Late Bronze to the Persian period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Copper alloy	1	Level I	4th c.	Tufnell 1953: pl. 63: 4	Dating according to Fantalkin and Tal 2004: 2188.
Tell es-Sumeriyeh (Lohamei HaGetaot)	Copper alloy	1	Tombs 1, 10, 11	5th-4th c.	Messika 1996: fig. 4: 1-3	---
Kamid el-Loz	Copper alloy	6	Graves 9, 12, 16, 33, 58	6th-4th c.	Hachmann and Penner 1999: pl. 21: 1-4; 22: 1-2	Terminals decorated with incised rings.
Tel Shor	Copper alloy	1	Burial	6th-4th c.	Golani forthcoming G	Corroded
Tel Michal	Copper alloy	1	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 7: 5	From individual cist tomb, found on ankle.
Tel ʿIra	Copper alloy	1	Tomb 23	6th c.	Freud 1999: fig. 8.5: 2, 5	Terminals decorated with incised rings.

Akhziv (er-Ras Cemetery)	Copper alloy	3	Tomb ZR XXVIII	7th-5th c.	Dayagi-Mendels 2002: fig. 4.20: 10, 11	---
Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR XLVI	7th-5th c.	Dayagi-Mendels 2002: fig. 4.31: 12	Identified as an armlet.
Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR XXIV	7th-6th c.	Dayagi-Mendels 2002: fig. 4.18: 7	---
Tel Miqne-Ekron	Copper alloy	1	Stratum IB	7th c.	Golani forthcoming A	---
Tel Miqne-Ekron	Silver	2	Stratum IB	7th c.	Golani forthcoming A	With incised ring decoration on terminals.
Amman – 'Ammonite' Tomb	Copper alloy	1	Tomb	8th-4th c.	Hadidi 1987: fig. 11: 4	Mixed tomb.
Lachish	Copper alloy	2	Burial cave 1002	8th c.	Tufnell 1953: pl. 57: 24	Excavator's dating.
Lachish	Copper alloy	9	Tomb 120	8th c.	Tufnell 1953: pl. 55: 2	Mixed tomb. Excavator's dating.
Lachish	Copper alloy	6	Tomb 223	8th c.	Tufnell 1953: pl. 56: 4	Excavator's dating.
Akhziv (er-Ras Cemetery)	Iron	1	Tomb ZR XXIX	9th-7th c.	Dayagi-Mendels 2002: fig. 4.21: 55	---
Hazor	Copper Alloy	1	Stratum VIII	9th c.	Spaer 2012: fig. 9.9: 5	Finials decorated with incised lines and animal heads.
Lachish	Copper alloy	4	Tomb 224	9th c.	Tufnell 1953: pl. 56: 15	Excavator's dating.
Lachish	Copper alloy	18	Tomb 218	10th-9th c.	Tufnell 1953: pls. 40: 4, 6; 55: 35	Excavator's dating.
Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR IX	10th-7th c.	Dayagi-Mendels 2002: fig. 4.7: 43	With cloth impressions. Thin ring.
Tell el-Far'ah (S)	Copper alloy	1	Tomb 224	10th–9th c.	Petrie 1930: pl. 42: 339	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Far'ah (S)	Copper alloy	1	Tomb 221	10th –9th c.	Petrie 1930: pl. 41: 293	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Beth-Shean (Mazar excavations)	Bronze	1	Stratum S-1a	10th-9th c.	Yahalom-Mack and Mazar 2006: photo 13.42, fig. 13.11: 3	Metallurgical analysis - copper with 10.3% tin.
Akhziv cemetery	Copper alloy	2	Tomb T.C. 2	10th c.	Mazar 2001: fig. 24: 2-3	---
Lachish	Copper alloy	4	Grave 110	10th c.	Tufnell 1953: pl. 54: 68	Found near feet. Excavator's dating.
Akhziv (ez-Zib Cemetery)	Copper alloy	1	Tomb Z 1	11th-7th c.	Dayagi-Mendels 2002: fig. 3.3: 4	Mixed tomb.
Tell el-Far'ah (N)	Copper alloy	1	VIIB	11th-10th c.	Chambon 1984: pl. 72: 29	Dating according to Chambon 1984.
Har Yona, Upper Nazareth	Copper alloy	2	Burial cave	11th-10th c.	Alexandre 2003: fig. 3: 1-2	Found on the long arm bones.
Tell el-Far'ah (S)	Copper alloy	1	Tomb 133	11th-10th c.	Petrie 1930: pl. 29: 262	Dating according to Laemmel 2003: Table 1.
Tell el-Far'ah (S)	Copper alloy	1	Tomb 134	11th c.	Petrie 1930: pl. 29: 275	Dating according to Laemmel 2003: Table 1.

Tel Beth-Shean	Copper alloy	4	Level V	11th c.	Unpublished	Found fused together in a stack. UM reg. no. 29-108-160
Cave A4 Baqʿah Valley	Copper alloy	2	Cave A4	12th-11th c.	McGovern 1986: fig. 83: 6, 8	---
Tell es-Saʿidiyeh	Copper alloy	4	Tomb 123	13th c.	Pritchard 1980: figs. 27: 14-15; 61: 1	With cloth impressions. Pair found on female ankles.
Tell es-Saʿidiyeh	Copper alloy	2	Tomb 120	13th c.	Pritchard 1980: figs. 25: 2; 60: 2	With cloth impressions on one ring.
Tell es-Saʿidiyeh	Copper alloy	1	Tomb 123	13th c.	Pritchard 1980: figs. 27: 13; 61: 4	With cloth impressions. Found on lower female forearm.
Tel Beth-Shean	Copper alloy	1	Stratum IX	15th c.	Unpublished	UM reg. no.29-108-203. With attached Type I.1 small ring and wound wire.
Tel Goren (Ein Gedi)	Copper alloy	1	Unclear provenance	---	Mazar, Dothan and Dunayevsky 1966: fig. 33: 5; pl. 36: 4	With incised zig-zag and line decoration.

7.3.2. Large Rings Type II – Closed

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
II.1	with Flat Section	Iron Age?	Rare	Fig. 21: 1
II.2	with Round Section	Iron Age I – Persian	Rare	Fig. 21: 2

Large Rings Type II.1 – with Flat Section (Fig. 21: 1)
Large closed rings with flat section.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Et-Taiyiba	Copper alloy	1	Tomb 6	12th-9th c.	Yannai 2002: fig. 10: 8	From disturbed burial.

Large Rings Type II.2 – with Round Section (Fig. 21: 2)
Large closed rings with round section. The ring from Azor appears to have retained traces of a soldered join between the two ends.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Silver	1	Stratum IV	2nd c.	Muhly and Muhly 1989: fig. 25: 12: 240	---
Hazor	Copper alloy	1	Stratum II	4th c.	Yadin et al. 1958: pl. 82: 8	---
Tell el-Farʿah (S)	Iron	2	Tomb 201	10th-8th c.	Petrie 1930: pl. 41: 281, 251	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Azor	Iron	1	Unclear	10th-9th c.?	Ben-Shlomo 2012: fig. 5.24: 14	With signs of a soldered join. Dating according to D. Ben-Shlomo.
Tel Beth-Shean	Iron	1	Levels III-IV	Hellenistic – Iron Age II	Unpublished	Probably for child. UM reg. no. 29-108-542
Tel Beth-Shemesh	Iron	1	Unclear	Unclear	Unpublished	Probably for child. UM reg. no. 61-14-112

7.3.3. Summary and Discussion – Large Rings Types I-II

The vast majority of large rings were made of copper alloy, a small percentage of silver or iron. Based on a collection of 204 large rings from a selection of sites from the 8th–6th centuries in the southern Levant, 97% were found made of ‘bronze’ (copper alloy) and 3% of iron (Limmer 2007: 272, Chart 6.1).

The most common type of large ring is an open form (Figs. 18-20) with tapered (Type I.1-I.2, Fig. 18) or squared-off ends (Types I.5-I.6, Fig. 20: 2-5). These types are differentiated by the cross-section, which is either semi-circular/square (Types I.1, I.5) or round (Types I.2, I.6), reflecting different manufacturing processes. The semi-circular/square cross-section was probably the result of an open casting or swaging manufacturing technique while those of round section were probably made by casting or by forging into shape (section 2.1.2.1.). Large rings with tapered terminals appear to have been the earliest, appearing locally already at the beginning of the 2nd millennium. Large rings with squared-off terminals appeared later during the Late Bronze Age.

The major innovation of the Iron Age II in all these forms is the massiveness of the rings, which may exceed 100 grams apiece. Such massive rings did not usually appear prior to the Iron Age II, nor were they common afterwards. They are especially prominent as multiple sets in tombs or as individual items in burials and habitational levels during the Iron Age II, especially during its first half (10th–8th centuries). The reason for the popularity of the massive ring during the Iron Age II is unclear, and may simply have been the local fashion.[217]

Some of the large rings have terminals that nearly meet, while the terminals of others are slightly overlapping. These heavy rings are so inflexible that Pritchard has suggested that they were permanently positioned on the limbs by the metal smith and customized to fit the wearer (Pritchard 1958: 32).

The terminals of these large rings are usually undecorated. When decoration occurs, it usually takes the form of a series of incised rings around the circumference of the terminal (see Fig. 20: 5). Another method of decoration is the shaping of the terminals into animal heads— usually snake heads, the rest of the ring then representing the body of the serpent. Bracelets decorated with snake-head finials (terminals) are known from Megiddo, dated to the Iron Age I (Guy 1938: pl. 161: 20-21), from Samaria Tomb S 101 associated with Period V and dated to the 8th century (Crowfoot, Crowfoot and Kenyon 1957: 446, fig. 106: 2) and from Hazor, dated to the Persian period (Yadin et al. 1961: pl. 365: 6). Locally, animal-head finials are relatively common in the Persian period, as at Kamid el-Loz (Hachmann and Penner 1999: pl. 20: 1-13) and at Tel Michal (Muhly and Muhly 1989: fig. 25.12: 232-239), and may be regarded as an Achaemenid influence, though the concept had been in use locally much earlier. Achaemenid bracelets commonly feature goat-, ibex-, bull- or lion-headed terminals (see Rehm 1992). According to Maxwell-Hyslop, bracelets with animal-head finials appear to have originated from the region of Urartu during the 9th–8th centuries, where they have been found at sites such as Marlik, Karmir Blur and Amlash (Maxwell-Hyslop 1971: 204-205). Platt has also noted that animal-headed bracelets, especially those with serpent heads, were present during the Iron Age II, especially in Urartu, and concurs on an Urartian origin for this fashion (Platt 1972: 42). However, the local presence of such decoration already during the Iron Age I, as at Megiddo, is earlier than the Urartian examples.[218]

Two additional types of large rings began in the Iron Age II: Type I.3 Large Rings with Twisted Wire (Fig. 19) and Type I.4 Large Rings with Catch (Fig. 20: 1). The first was relatively common, beginning in the Iron Age II and continuing into the Persian period. The second was quite rare and exclusive to the southern Levant during the 8th–7th centuries.

Type II Closed Rings (Fig. 21) were not as common as Type I Open Rings for the simple reason that open rings could be applied or removed at will, while closed rings were more difficult to put on. Closed rings were made by casting, or by soldering the two terminals of an open ring together. In many publications, large rings were so corroded that it was difficult to determine if they were originally open or closed types. Thus, in many instances, a closer examination or cleaning of a closed ring often reveals it to have originally been open. Closed rings are nearly always undecorated, although they appear at the same time as open-ended forms.

7.3.4. The Cultural Context of Large Rings

Large rings are commonly portrayed in local iconographic female figurines of the Iron Age II, in pictorial representations found outside the southern Levant, and are also recovered in burials. They are usually depicted or found as anklets, armlets and bracelets,[219] though no one type can be definitely associated with any one of these functions.

2.3.4.1. Anklets

Many plaques and 'Astarte' figurines depict women wearing multiple anklets. These figurines were common during the Iron Age II, as at Hazor (Yadin et al. 1961: pl. 253: 11; Tadmor 2012: fig. 7.2: 1). When worn in stacks,

[217] One possibility may have been a desire to increase the audile effect of these rings when worn in stacks. The wearing of multiple rings was a custom that began in the Middle and Late Bronze Ages, as is evident in numerous iconographic depictions of figurines with multiple rings on the arms and ankles (Chapter 1.3.1, see above 7.3.4.).

[218] This does not necessarily imply a local origin for this decorative concept, as the general shape of any large ring is suggestive of a serpent form, making serpent-head decoration of finials a natural and intuitive choice.

[219] The terms anklets, armlets and bracelets are here used to denote large solid metal rings, as distinct from threaded beads that may be strung into flexible bands.

multiple anklets would have produced a distinct tinkling sound with every movement. The weight of a 'set' of four typical Iron Age II anklets or bangles such as those found in the Iron Age tombs at Lachish (Tufnell 1953: pls. 40: 4, 6; 54: 68; 55: 35-38; 56: 15; 57: 45) averages about 347 grams (Tufnell 1959: 38), so such ornaments could have served as permanent dress accessories. Multiple anklets are often seen on Iron Age II figurines depicting female tambourine players, regarded as representing goddesses, priestesses or musicians (Beck 1990; Paz 2003, and see there for further references), such as on an example from Tel ʿIra (Beck 1990: fig. 1). Anklets could have been standard accessories for dancing, not simply for ornamentation.

The fashion of wearing anklets may have originated in Transcaucasia during the 5th millennium (Tufnell 1959: 53). Pictorial representations of men and women wearing anklets abound throughout the Fertile Crescent, Anatolia and the Aegean from the 2nd millennium (Tufnell 1959: 43-46; Green 2007). However, during the Iron Age II, Neo-Assyrian monarchs and their functionaries were never shown wearing anklets. In Egyptian Old and New Kingdom art, Egyptians and Nubians never wear solid-metal anklets, which are only depicted on Asiatic men and women (Müller 1906: 10: pl. II). When worn by men, they were usually single items (Tufnell 1959: fig. 4: 4-5), while those on women were more often multiple. In Aegean depictions of the late Middle Minoan and the Late Helladic Ages, both men and women wear anklets (Younger 1992: 274).

Anklets are one of the few types of objects identified *in situ* in burials. A single silver anklet was found on the leg of a child in a Middle Bronze Age II burial at Sidon (Doumet-Serhal 2004: fig. 6), and two pairs of anklets on either ankle are known from Tomb 123 at Tell es-Saʿidiyeh, associated with the burial of a pregnant woman (uncovered with the skeletal remains of a fetus *in situ*) dated to the 13th–12th centuries (Pritchard 1980: fig. 61: 1).[220] These anklets were covered by cloth impressions, a feature found on bracelets and armlets in burials from the Iron Age and Persian periods. This suggests that the custom of wrapping the body in some kind of cloth at the time of burial, much like Jews today are buried in a *talith* or prayer shawl, was practiced in the southern Levant at the very onset of the Iron Age I.

Tufnell attributes the finding of anklets in occasional burials of the 12th century onwards in Egypt as reflecting the presence of non-Egyptians (Tufnell 1959: 46). Though very rare in Egypt during the Iron Age, solid-metal anklets were discovered, for example, *in situ* as a pair on each ankle of a female burial of the 8th–7th centuries at Tell el-Yahudiyeh (Petrie and Duncan 1906: 19, pls. 19: B-D, 21: B). Tufnell determined that this burial was not of an Egyptian (Tufnell 1959: 46), as the anklets are identical to those common during the Iron Age II throughout the southern Levant (see above 7.3.1., Large Ring Types I.5 and I.6; Fig. 20: 3-5). Anklets have also been found *in situ* as two pairs on each ankle in burials of undetermined gender in Grave 147 at Lachish, where they also bore textile impressions (Tufnell 1953: pl. 5: 2, and see also from Grave 110, idem: pl. 54: 68) and a single anklet was retrieved *in situ* in Tomb 4005 (idem: pl. 9: 3), both dated to the Iron Age II. Single anklets with squared-off ends and animal-head terminals have been found *in situ* in burials of women and children at Kamid el-Loz, dated to the Persian period (Poppa 1978: pl. 27, 29, 30-31, 34) and see also single anklets on a female burial (Heinz et al. 2006: fig. 4). The repeated finding of multiple anklets associated with women and children suggests an apotropaic association with fertility and child rearing, as has been implied by Stol (2000).

As they are generally thicker and more rigid than other types of jewelry, anklets present difficulties in placement and removal, requiring the use of metalworking techniques or physical force. This fact suggests that they were permanent dress accessories of both children and adults that were rarely removed and had to be periodically adjusted or replaced during a lifetime, when they were ‘grown out of’ (Green 2007: 295).

The existing iconographic, pictorial and burial evidence indicates that during the Bronze through Persian periods, anklets were a common dress accessory worn by men, women and children throughout the southern Levant. In contrast, Egyptian, Nubian and Neo-Assyrian fashion appears to have shunned the use of solid-metal anklets, even though they were well-known to the Egyptians from their contacts with Asiatics, whom they meticulously depicted, often wearing anklets. The manner in which anklets were worn may thus be viewed as an ethnic or cultural fashion during the Bronze and Iron Ages.

The use of multiple anklets was reserved primarily for women, possibly related to the additional audile effect they provided that would accentuate dance (Meyers 1992: 256). Based on the evidence from Late Bronze Age and Iron Age I burials at Tell es-Saʿidiyeh, Green has concluded that anklet *pairs* (multiple anklets) appear to have been worn primarily by women, infants and children, while *single* anklets were reserved primarily for males, possibly of high status (Green 2007: 290). However, the finding of single anklets on females as well as males limits this conclusion to the statement that so far it appears that multiple anklets were not worn by males. The fact that multiple anklets were nearly always depicted along with multiple bracelets on female plaque figurines suggests that both

[220] Multiple anklets, such as those found on women with infants and those depicted on female plaque figurines, have been regarded as “a highly visible symbol associated with the body that reinforces links between the woman and the deity and thus also the bonds between mothers and children” (Green 2007: 300).

items were a representation of gendered asymmetry and identity, or signified being bound or consecrated in a cultic ritual (Younger 1992: 274).

2.3.4.2. Armlets

Similar to anklets, solid-metal armlets were also commonly depicted on local clay female plaques and figurines during the Bronze and Iron Ages. These may be single, or often double or triple armlets, as in several Iron Age II (?) examples from Gezer (Macalister 1912b: fig. 499; 1912c: pl. 221: 2) of women with triple armlets and bracelets holding tambourines (and see also from the Iron Age I at Hazor; Tadmor 2012: fig. 7.2: 1). Sometimes the armlets appear to bear a zigzag or dot decoration, as in an early Iron Age II example from Tell el-Farʿah (N) (Chambon 1984: pl. 63: 4, 84) or from Deir ʻAlla, attributed to the Late Bronze Age (Franken 1960: pl. 13a).

In North Syrian and Neo-Assyrian depictions of the Iron Age II, solid-metal armlets were symbols of rank or insignia worn on the upper arm by officials or their servants (e.g., Fales and Postgate 1992: 19, 144).[221] Their purpose was not only an expression of status or rank but also apotropaic, conferring protective powers on their wearer (Maxwell-Hyslop 1971: 246).

In Egyptian artistic depictions, both men and women are often shown wearing solid-metal armlets as matched sets with bracelets, and these are common in depictions of kings, officers and servants of the royal court during the New Kingdom (Andrews 1990: 158, fig. 126). A depiction of Ramses III from Medinet Habu shows him wearing a pair of decorated armlets (Nelson 1930: pl. 24). These are identical to those found *in situ* on the arms of a male skeleton in an 11th century ʻPhilistine' tomb at Tell ʿEitun (Edelstein and Aurant 1992: figs. 7, 12: 10) and those depicted on a figurine from Tell el-Farʿah (N) of the 10th–9th centuries (Chambon 1984: pl. 63: 4, 84).

In Aegean representations dating to the late Middle Minoan and Late Helladic Ages, men commonly wear gold and silver armlets, although women usually do not (Younger 1992: 269-270). In the depiction of the boxers from Akrotiri, the elder of the two youths wears not only an armlet but also an earring and a necklace (Younger 1992: pl. 63a), a jewelry set that is often found to recur in depictions of grown men. This suggests that certain jewelry items were an indication of status and maturity (Younger 1992: 269, pl. 66: c).

Cypriot votary statues of males from the 6th century also depict the use of metal armlets, which are formed as large spiral rings wound once, once and a half or even twice around the arm (Karageorghis 2000: figs. 169, 176, 180, 187).

The evidence from excavations includes a plain armlet with cloth impressions found *in situ* in a 13th–12th centuries female burial from Tell es-Saʿidiyeh in Jordan (Pritchard 1980: figs. 27: 13; 61: 4), while several additional *in situ* armlets are known from an 11th–10th centuries burial at Har Yona, near Nazareth (Alexandre 2003: 186).

In summary, the existing evidence indicates that during the Iron Age II in the southern Levant, both men and women wore solid-metal armlets. However, some of the iconographic and pictorial evidence suggests that armlets were also worn by males as symbols of status associated with rank or authority.

2.3.4.3. Bracelets

In modern society, bracelets are often worn for personal adornment, as an expression of wealth or even for medicinal purposes,[222] but throughout history, bracelets have fulfilled a variety of functions.[223]

Bracelets of simple, un-stylized forms and often in multiple stacks, are commonly depicted on female plaques or figurines of the Iron Age II, as at Tel Batash (Mazar and Panitz-Cohen 2001: pl. 30: 1), Tell Beit Mirsim (Albright 1943: pl. 55: 2, 3) and Tell ʻIra (Beck 1990: fig. 1). This phenomenon already existed during the Late Bronze Age, as at Ashdod (Dothan 1971: fig. 35: 9, pl. 31: 11), and is also seen in other objects depicting female figures, such as an ivory handle from Nimrud, dated to the 9th–8th centuries (Barnett 1975: pl. 75: S 215). In numerous examples from the Iron Age I and II, women with multiple bracelets are depicted holding a tambourine, as at Gezer (Macalister 1912c: pl. 221: 2; and see also pl. 220: 20, 21; 1912b: fig. 499; Dever 1986: pl. 58: 8), Tell el-Farʿah (N) (Chambon 1984: pl. 63: 2, 84: 63.2) and Hazor (Yadin et al. 1960: fig. 76: 13, pl. 163: 1; Tadmor 2012: fig. 7.2: 1). As with anklets, the act of striking the tambourine while wearing multiple bracelets would have added a distinct tinkle along with the beating of the drum.

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221 A 9th century stele depicting king Kilamuwa and his servant from Zinjirli shows both wearing armlets (Pritchard 1954: fig. 455). Neo-Assyrian armlets of the 9th century appear to have been an essential part of kingly and priestly attire, especially when they engaged in ritual ceremonies with various protective deities, who also wear armlets (Pritchard 1954: fig. 617).

222 For example, in the 1970's there was a fashion of wearing pure copper bracelets that were reputed to have healing powers.

223 In European history, bracelets served multiple functions for political and religious elites that were associated with rank, status and oath taking. For example, bracelets were sworn upon by the Danes, Icelanders and other northern European tribes (Taylor 1820: 77ff.), the bracelet comprised a distinguishing mark for Anglo-Saxon kings and warriors, and it was also offered as a reward for successful service (Jones 1883: 75ff.).

Though no clear examples of this are known in the southern Levant during the Iron Age II, in neighboring cultures, bracelets functioned as a sign of rank or office signifying kings, dignitaries, functionaries or dieties. Thick bracelets are depicted on a 9th century relief from Carchemish (Pritchard 1954: fig. 37), on a warrior in a 9th century relief from Zinjirli (idem: fig. 36), and in a Late Hittite depiction of the god of vegetation from Ivriz, dated to the 8th century (idem: fig. 527).

Neo-Assyrian reliefs of the Iron Age II commonly depict bracelets with a rosette mount on the wrists of kings and queens and are clearly a sign of rank and office (Pritchard 1954: fig. 617; see Maxwell-Hyslop 1971: 246-251; Bedal 1992; Fales and Postgate 1992: 19, 45, 106, 109, 118, 144). Neo-Assyrian and North-Syrian depictions from the Iron Age II also show multiple bracelets on women (e.g., Amiet 1966: fig. 413; Fales and Postgate 1992: 30, 109, 138), such as an 8th–7th centuries funerary stele from Zinjirli in northern Syria (Pritchard 1954: fig. 630). Simple, single bracelets are depicted on the wrists of soldiers, scribes and courtiers, as on an 8th century relief from Arslan Tash (Pritchard 1954: figs. 173, 235, 623).

The Egyptians frequently depicted bracelets, and mummies of the 20th–22nd Dynasties have been found with multiple bracelets (Wilkinson 1971: 169-173). New Kingdom depictions show women wearing multiple bracelets (Andrews 1990: fig. 126) and foreigners wearing single or multiple bracelets (Pritchard 1954: fig. 52). Nubians are shown with bracelets formed from beads (idem: fig. 4).

Aegean representations of the late Middle Minoan and Late Helladic Ages indicate that delicate bracelets were worn by women (Televantou 1992: pl. 35: e; Younger 1992: 270-271), while those of men were solid and massive, possibly composed of several large beads strung together (Younger 1992: pl. 66: c).

Direct evidence from archaeological excavations is limited. Metal bracelets have been found on the wrists of female skeletons in Intermediate Bronze Age burials at ʿEnan (Eisenberg 1985: fig. 10: 66, 67), around the lower arm bones in burials of undetermined sex dating to the Middle Bronze Age II at Tel Aviv Harbor (Kaplan 1955: fig. 5: 15), *in situ* on the wrist of a child in a jar burial of the Middle Bronze Age II at Megiddo (Loud 1948: fig. 338), and as single items *in situ* on both male and female skeletons in Late Bronze Age and Iron Age I burials at Tell es-Saʿidiyeh (Green 2007: 290). An Iron Age I jar burial from Megiddo containing the disarticulated remains of an infant less than one year of age, was reported as containing four bronze bracelets, two still with fragments of coarse cloth adhering to them, and numerous beads (Guy 1938: pl. 137: 15; 138: 4-5). These rings were not found in position on the bones, so it is unclear whether they functioned as bracelets, armlets or anklets, or were simply included as part of the burial offerings. A bracelet was found in position on the left wrist of an Iron Age II burial of undetermined sex in Grave 236 at Lachish (Tufnell 1953: pl. 56: 17). Large metal rings were identified on the wrist of an unsexed Iron Age II burial at Tell-en Nasbeh (McCown 1947: pl. 18: 6; Brody and Friedman 2007: 100). Bracelets composed of frit beads and Type I.1 Silver Granule Beads have been identified around the wrists of a young female skeleton from a Persian-period burial at Kamid el-Loz (Poppa 1978: pl. 23: 64-65, pl. 41: Grave 76), and solid-metal bracelets were found in position on the lower left arm of a young male skeleton from Grave 16 at this site, also dated to the Persian period (Poppa 1978: pl. 12: 4; pl. 28: Grave 16). However, large metal rings may have been used in a different manner than expected, as is attested by a large metal ring found *in situ* upon the *ear* of an adult female from Kamid el-Loz (Poppa 1978: pl. 4: 14; pl. 40: Grave 2).

Unlike the use of multiple or paired anklets that are associated primarily with women, single bracelets in both male, female and infant burials throughout the southern Levant during the Bronze through the Persian periods suggest that this form of use was not gender or age restricted. In North Syria, Neo-Assyria and Egypt, single bracelets, usually massive, are often found adorning warriors, functionaries and gods and may have been an indicator of rank and status. In the southern Levant during the Iron Age II, single and multiple bracelets also appear to have been associated with rank and status, though definite archaeological evidence for this is still lacking. Multiple bracelets may have been worn by females for their added musical value, as seen on female figurines that probably represent dancers.

7.4. Pendants

Though pendants may have a function very similar to that of beads, they are here defined as any jewelry object in which the stringing hole is found near one of the ends, enabling their suspension from a cord or thong so that they may be worn around the neck or otherwise hung. A pendant should be light enough to be worn comfortably, though our judgment on comfort may be different from that used in the past. Pendants can take on almost any shape and be made of metal, stone, bone/ivory, shell, siliceous materials or terracotta, not to mention perishable items such as wood that are obviously invisible in the archaeological record. Pendants can also be used with beads as a part of an elaborate necklace. Where such objects probably served as components of earrings, they are treated under the category of earrings. Necklaces and collars may include one or more pendants and they may be worn on headdresses, girdles and other garments.

The material from which it is made usually dictates the form, size and construction of a pendant. For example, precious metal can be used to create small intricate forms and decorations that are not possible in stone, but because of its cost, both in terms of raw material and time expenditure for manufacture, metal is not as commonly used as cheaper and more easily worked materials such as bone, shell, faience and glass. For these reasons, pendants in the present typology are classified first by material (Metal-Type I (Fig. 22), Stone-Type II (Fig. 23), Bone/Ivory, Tooth, Shell-Type III (Fig. 24-19) and Siliceous Materials, e.g., Faience-Types IV-VII (Fig. 27) and then by specific form within each type. Perforated shells that may have been used for personal adornment are regarded as pendants, especially when they appear to have been deliberately modified. Of the faience pendants, the large number of types of Egyptian inspiration warrants a separate heading for these, which in the following sections have been further divided as to Non-Egyptian (Type IV; Fig. 27) and Egyptian-style amulets (see below Part II, sect. 7.4.6.). The latter are beyond the scope of this study and are not discussed in this work (but see Andrews 1994 and especially Herrmann 1994; 2002; 2003; 2006).

Pendants were made of a wide range of materials and it is sometimes also the material, and not only the form, which lent the pendant some of its significance. However, as many types of pendants are of a specific shape and significance, the same form was often made in several different types of materials.[224]

Most amulets are hung and therefore may be seen as a type of pendant. An amulet is a personal ornament, which by magical means endows the wearer with certain powers or capabilities. Nearly all amulets are provided with a stringing hole. Sometimes the hole is found near one of the ends, as in pendants, and sometimes the hole is found through the central axis, as in beads.

7.4.1. Pendants Type I – Metal

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
I.1a	Solid Spherical Pendant	Iron Age II	Phoenician?	Fig. 22: 1-4
I.1b	Hollow Spherical Pendant	Iron Age II – Persian	Phoenician?	Fig. 22: 5-6
I.2a	Flat Ovoid or Rounded	LB – Persian	Common	Fig. 22: 7
I.2b	Double Flat Oval	LB	Rare	---
I.2c	Flat Rounded with Star	MB – LB	Common	---
I.2d	Thin Flat Strip	LB – Iron Age I	Rare	---
I.3	Pomegranate	LB – Iron Age I or II	Primarily LB-Iron Age I.	Fig. 22: 8-10
I.4a	Crescent with Stringing Holes	MB II – Iron Age II	Common, primarily LB and Iron Age I.	Fig. 22: 11-15
I.4b	Crescent with Tubular Stringing Attachment	MB II – Iron Age II	Common, primarily LB – Iron Age I.	Fig. 22: 16-25
I.5	Palmette	LB II	Rare	---
I.6	Bell	Iron Age II – Roman	For use by humans and animals.	Fig. 22: 26
I.7	Composite–Metal Hoop and Bead	Late Iron Age II – Persian	Rare	Fig. 22: 27-28
I.8	Fly (*cloisonée*)	LB	Rare	---
I.9	Triangular Jewelry Plaques	LB – Iron Age I	Common	---
I.10	Double Concentric Spiral Wire	Locally – MB II onwards	Common	Fig. 22: 29
I.11	Flat Rectangular	LB	Rare	---
I.12	Amphora-Shaped	Iron Age II – Persian	Rare	Fig. 22: 30-32
I.13	*Pazazu*	Iron Age II	Rare, Assyrian form	Fig. 22: 33
I.14	Round Medallion, Composite	Iron Age II	Phoenician type	Fig. 22: 34-36

Pendants Type I.1a – Solid Spherical Pendant (Fig. 22: 1-4)

Small pendants consisting of a solid-cast sphere fitted with a wire collar into which a single or double wire loop is inserted, or with a collared tubular extension capped by a collared tubular stringing attachment.

Such pendants are not very common and have so far been found primarily at sites that have produced Phoenician or Phoenician-inspired jewelry. The use of collared tubes as stinging attachments is a classic Phoenician trait

[224] Pendants, and especially those representing specific Egyptian-style amulet forms, were often made in several different materials, the most common of which was faience. To avoid repetition, the same form may occasionally be noted under the heading of a different material.

found throughout the Mediterranean (e.g., at Tharros; see Pisano 1987: pl. 38: 8, 42: b-c, e-h, k-l, 43: a-b), which has its beginnings in the Late Bronze Age (see below Metal Pendant Type I.4b; Fig. 22: 16-25).

These pendants may have made up a necklace and/or been sown on the edge of a scarf, headdress or band, though their use as earring pendants cannot be ruled out.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 23: 151	Possibly a part of an earring. Excavator's date. Probably heirloom from 7th-6th c.
Tel Miqne-Ekron	Silver	6	Stratum IB	7th c.	Golani and Sass 1998: 70, fig. 14: 1	From sealed hoards.
Akhziv cemetery	Silver	6	Tomb no. 1, Phases 1-4	10th-6th c.	Mazar 2004: fig. 23: 1-5, 18-19	---

Pendants Type I.1b – Hollow Spherical Pendant (Fig. 22: 5-6)

This form is similar to Type I.1a, but includes a hollow instead of a solid sphere, made by forming two hemispherical halves of sheet-metal into a doming block and then soldering them together into a sphere.[225]

Similar pendants abound throughout the Phoenician world, such as of copper alloy at Tyre, probably to be dated to the 7th-6th centuries (Seeden 1991: fig. 53: a-b; Núñez 2004: fig. 54: 4), in gold from Cadiz dated to the second half of the 6th century (Perdigones Moreno et al. 1990: fig. 35: 8), in gold from Tomb 1 at Laurita in Spain, dated to the 7th-6th centuries (Catalán 2007: fig. 14: F), at Sardis in western Asia Minor in silver, dated to the 7th-6th centuries (Densmore Curtis 1925: pl. 8: 4), in gold and electrum at Ephesus, dated to the 7th-6th centuries (Hogarth 1908: pl. 10: 75, 83, 86) and in gold from the Carthaginian necropolises at Dermech and Douimes of the 7th-6th centuries (Quillard 1979: e.g., pl. 6; 1987: 27, pl. 9: 100).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Silver	6	Tomb 2001	6th-4th c.	Herzog and Levy 1999: fig. 2: 11-16	---
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 23: 3	---

Pendants Type I.2a – Flat Ovoid or Rounded (Fig. 22: 7)

Ovoid or rounded pendants made of sheet-metal. At one end of the pendant is an elongated and tapered 'tongue', which is bent forward and coiled to form a loop.

The technique of producing an ovoid piece of sheet-metal with an extended strip or tongue at one end that was rolled over to form a suspension hoop was locally practiced since the Late Bronze Age (and see McGovern 1985: 71-72, Type VI.D.1-3) continuing into the latter part of the Iron Age II through the Persian period. Such pendants are usually made of gold or silver, though copper alloy examples are also found.

The pendant could have been left as blank, the form and the metal itself being the purpose of display, but most examples bear a design executed by engraving or *repousée*. During the Late Bronze Age, these consisted of geometric, floral or anthropomorphic designs (see McGovern 1985). During the Iron Age II, ovoid pendants bear either simple geometric decoration, such as an example from the Jordanian hoard, or intricate cultic scenes such as the example from Tel Miqne-Ekron.

The 7th century silver ovoid pendant from Tel Miqne-Ekron (Fig. 22: 7) has an engraved decoration on one side, the other side is blank.[226] The decoration consists of a crudely-incised ritual scene featuring a bearded(?) worshipper in a long garment, hand raised in adoration, facing the goddess Ishtar in nimbus and standing on a lion which she holds by a leash. A cult stand(?) is depicted between them, while a crescent, winged sun and the seven Pleiades are shown above. In the foreground (exergue) is a hatched design. The incised depiction found on this pendant is a crude version of a well-known Neo-Assyrian cultic scene (Ornan 2001b). Examples of such pendants are known from Zinjirli and Urartu, all dated to the 7th century (von Luschan 1943: 99ff, pl. 44: d-f; Kellner 1991: 167, pl. 4). The crude rendition of the cultic scene may be the product of a local craftsman that was familiar with the motif but was far removed from its original source (Ornan 2001b: 248-249). While the Neo-Assyrian depiction was familiar to this craftsman, the local element is evident not only by the sloppily rendered execution, but also by Phoenician iconographic elements in the depiction that are not found in the Neo-Assyrian realm (Ornan 2001b: 245-246). This

[225] Six more fragments of such beads in silver were found in Tomb no. 1 at Akhziv (Mazar 2004: fig. 23: 11-16), though it is unclear whether they were made of hollow or solid balls.

[226] For a preliminary publication of this pendant see Gitin and Dothan 1992. A final publication of this pendant is forthcoming by Prof. S. Gitin.

particular pendant is a good example of the adaptation of Neo-Assyrian imagery by local artisans, and suggests the penetration of the Ishtar cult into the southern Levant at the end of the Iron Age II (idem: 251).[227]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Silver	2	Tomb 24	6th-4th c.	Johns 1933: 96, pl. 23: 869-870	Corroded. Excavator's dating.
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 22: 144	Ovoid-shaped, with *repousée* knob at center and engraved lines along edges. Excavator's dating. Probably heirloom from 7th-6th c.
Tel Miqne-Ekron	Silver	1	Stratum IB	7th c.	Golani and Sass 1998: 70-72, fig. 14: 2	Ovoid-shaped, with engraved Neo-Assyrian cultic scene.
Tel Beth-Shean	Gold	1	Level VII	13th c.	Unpublished	Blank, from temple, UM reg. no. 29-105-67.
Tell Abu Hawam	Gold	1	Stratum V	14th-13th c.	Hamilton 1934: pl. 39: 416	Ovoid-shaped, with human figure engraved on one side. Excavator's dating. See also Artzy 2008.
Lachish	Gold	1	Fosse Temple-Structure II	14th c.	Tufnell, Inge and Harding 1940: pl. 26: 6	Ovoid-shaped, with *repousée* decoration of two palmettes. Excavator's dating.
Lachish	Gold	1	Fosse Temple area	15th-13th c.	Tufnell, Inge and Harding 1940: pl. 26: 7	Ovoid-shaped, with *repousée* decoration of two palmettes. Excavator's dating.
Lachish	Copper alloy	1	Fosse Temple-Pit 172	15th-13th c.	Tufnell, Inge and Harding 1940: pl. 26: 1	Corroded. Ovoid-shaped. Excavator's dating.
Lachish	Silver	1	Fosse Temple-Pit 176	15th-13th c.	Tufnell, Inge and Harding 1940: pl. 26: 2	Corroded. Ovoid-shaped. Excavator's dating.
Lachish	Gold	1	Fosse Temple area	15th-13th c.	Tufnell, Inge and Harding 1940: pl. 26: 3	Ovoid-shaped, with *repousée* decoration of concentric lines. Excavator's dating.

Pendants Type I.3 – Pomegranate (Fig. 22: 8-10)

Hollow pendants made of sheet-metal in the shape of a pomegranate. The fruit is fashioned of a hollow globe made of two halves formed on a doming block and joined together. The seam between the two halves is usually invisible due to filing and polishing. Within a small circular hole of the globe was inserted a short tube, one end of which was crenulated to resemble the petals of the fruit. On the other side of the globe, another hole was fashioned, into which a short, semicircular wire was inserted for suspension.

The pomegranate was one of the 'seven species' mentioned in the Old Testament, where it was often used in imagery denoting wisdom and the blush of feminine beauty (e.g., see Song of Solomon 4: 3). Because of its numerous seeds, the pomegranate fruit probably bore connotations of bounty, plenty, fertility and fecundity, and for this reason, is commonly represented in the iconography of the Late Bronze and Iron Ages throughout the ancient Near East, Cyprus and Greece. Its symbolic meaning, probably relating to fertility and the afterlife, was widely recognized in the eastern Mediterranean during the Bronze and Iron Ages (Dothan and Ben-Shlomo 2007). As an example, pomegranate seeds have been identified in female burials of the 11th-9th centuries at Wadi Fidan in Jordan (Levy et al. 2005: 485), suggesting that they were connected with fertility and regeneration in funerary rites as well. Locally, ceramic pomegranates are often found as cultic affixtures in bowls and kernoi, and they may be fashioned as small ceramic pendants, such as three examples from an Edomite shrine at Ein Hatzeva, dated to the 7th century (Cohen and Israel 1996: 116, fig. 125). Pomegranates are also found made of glass, faience, bone and ivory. As such they are usually connected to religious/cultic activities throughout the Near East and the eastern Mediterranean from the Middle Bronze period onwards. As an iconographic element of Canaanite religion, they were adopted into the imagery of the Israelite religion as well (Dothan and Ben Shlomo 2007). Gold pomegranate pendants are common in Iron Age Greece, primarily in the Eastern Aegean and Western Anatolia, and they appear during the

[227] Other local examples of direct Neo-Assyrian influence through the depiction of Ishtar are found in several cylinder and stamp seals that may be dated to the 8th-7th centuries (Ornan 2001b), all of whom appear to have been of local manufacture that were inspired by Neo-Assyrian imagery.

Mycenaean period. Iron Age examples are also found in Urartu, Ashur and the Persian highlands (Rudolph 1995: 68-69). Pomegranates that make up a necklace, probably of gold or silver, are mentioned in Neo-Assyrian inventories of precious items (Fales and Postgate 1992: 91) and actual examples are known from Nimrud (Damerji 1999: pl. 11-12). The pomegranate is also a recurring theme in Neo-Assyrian iconography, where it is usually depicted as the 'tree of life' (e.g., Collon 2001b: nos. 151, 180). Gold pomegranate pendants, as in the examples discussed here, are a part of the attire of the high priest (Exod. 39:25-26).

This form of pendant in precious metal was popular in Cyprus where it first appears during the Late Bronze Age at such sites as the Ayios Iacovos Bronze Age sanctuary dated to the 14th-13th centuries (Gjerstad et al. 1934: pls. 3; 67: 4, 27; Pierides 1971: 18, pl. 8: 4). Gold pomegranate beads continue to be found in Cyprus during the Persian period where they were found hung as tassels on an earring from the site of Soli dated to the 5th century (Pierides 1971: 26-27, pls. 14: 4, 22: 2).

Locally, metal pomegranate pendants as jewelry are primarily characteristic of the Late Bronze and Iron Age I, when all known examples are made of gold. Pomegranate pendants not functioning as jewelry, such as those found adorning a bronze tripod from Ras Shamra dated to the Late Bronze Age (Schaeffer 1929: pl. 60: 1) may be made of other materials. The sole example of this type from the Iron Age II is made of silver and originates from the Eshtemoʿa hoard, dated by the excavator to the 10th century. As most local examples of this type are of Late Bronze Age and Iron Age I date, the singular example from Eshtemoʿa may possibly be seen as an heirloom. However, its manufacture in silver, in contrast to all known Late Bronze Age and Iron Age I jewelry examples that are of gold, does suggest that this object may have been of Iron Age II manufacture (see section 2.6.2.).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Eshtemoʿa	Silver	1	From hoard	10th c.	Yeivin 1990: fig. 17: 11	Partial
Megiddo	Gold	2	Tomb 39	12th-11th c.	Guy 1938: pl. 166: 9a-b	Excavator's dating.
Tel Ashdod	Gold	1	Stratum XIII	12th c.	Golani and Ben-Shlomo 2005: 249-250, fig. 4.1: 4	---
Megiddo	Gold	3	Stratum VIIA	12th c.	Loud 1948: pl. 215: 113, 224: 28	Dating according to Mazar 2008.
Beth Shean	Gold	1	Tomb 90	13th-12th c.	Oren 1973: fig. 45: 16	Probably from disturbed anthropoid coffin burial.
Tel Miqne-Ekron	Gold	1	Pre Stratum VIB	13th-12th c.	Golani forthcoming A	Found crushed. Reconstructed in drawing.
Tel Beth-Shemesh	Gold	1	From hoard	14th c.	Tadmor and Misch-Brandl 1980: fig. 3a	Hung from a long braided chain.

Pendants Type I.4a – Crescent – with Stringing Holes (Fig. 22: 11-15)

Flat crescent-shaped pendants, usually provided with two stringing holes positioned either at both ends of the crescent or side-by-side in the middle. These pendants are found in copper alloy, silver and gold, while the same form is also found in bone.

Crescent-shaped pendants have a long tradition of use that begins during the Middle Bronze and continues through the Iron Age II. The flat variant with stringing holes may have been worn with a thong or thread passing through the holes, but there is also evidence that they may have been sewn on the garment itself.[228]

Macalister (1912b: 449-450) suggested that crescent pendants were amulets created to resemble two boar tusks bound together at their base,[229] noting that the boar's tusk was an important prophylactic that is still used to avert the evil eye from horses.[230] Though he did not find such tusks bound together, he does note that numerous boar

[228] One such crescent from Macalister's excavations at Gezer was found with cloth impressions on one side, suggesting that is was worn directly upon a garment, possibly sewn (Macalister 1912b: 76, fig. 269).

[229] One silver crescent from Gezer, associated by Macalister to the Hellenistic period, shows exactly such an arrangement of a wire crescent, at the center of which is found wound-wire (Macalister 1912c: pl. 226: 10; see Platt 1972: 210).

[230] In a letter written by Macalister and published by Ridgeway (1908: 246), the first excavator of Gezer notes that bound boars tusks were sold in Jaffa at the turn of the century as a prophylactic to be hung on horses against the evil eye, and that they commanded a very high price.
In this light it is interesting to note that crescents are mentioned as spoils of war taken by Gideon from the necks of Midianite camels (Judges 8: 21) indicating that such ornament/amulets were worn on pack animals in modern as well as in ancient times, possibly for the same purpose. A large Type I.4b copper alloy crescent from Stratum VIIB at Megiddo dated to the 14th century (Loud 1948: pl. 213: 80) appears too large and heavy to have been worn on the body and may represent just such a protective crescent to be worn on the neck of an animal.

tusks were found in the excavations throughout all the strata at Gezer. Platt has also suggested that these crescents are representative of bound bovine horns; the ribbed striations on the suspension hoops of Type I.4b Metal Pendants (see below) being reminiscent of wire wrapping that tied the two horns together at their base (Platt 1972: 223). Following Petrie (1914: 23), Maxwell-Hyslop has suggested that these pendants represent a waning moon and are connected with the moon-cult (Maxwell-Hyslop 1971: 64-82, 149-151). The crescent may be seen to signify regeneration in the new moon coming after darkness, a redeeming symbolism that was celebrated in ancient Israel as well as throughout the ancient Near East (Keel 1998: 70; Theuer 2000).[231] As such, the crescent may be seen as invoking the protection of the moon god, often related to the bull whose horns also form a crescent (Ornan 2001a).

The crescent moon, widely used in antiquity, was also associated with women's fertility and with children (Hughes-Brock 1999: 280). A group of Late Bronze age terracotta fertility plaques depicting a woman with twins all show a crescent pendant suspended from the neck; the crescent is interpreted as a protective amulet to safeguard birthing by invoking divine intervention and assistance of the moon god (Ornan 2007: 218-219, 229). The crescent is often rendered along with the sun or the moon-disk (Petrie 1914: pl. 6: 85k, 85l, 85m), a form known as 'crescent or horns with disc' (McGovern 1985: 70, Type VI.B.2., fig. 67) that is locally known during the Late Bronze and Iron Age I. This arrangement appears on the chest of a basalt statue of a male priest or diety standing in front of a circular basin, found at Hazor and dated to the Late Bronze Age (Bonfill 2011). The use of this motif is locally found in the Iron Age II as well (see Bernettt and Keel 1998) and throughout the Phoenician west during the 7th-5th centuries (Pisano 1987: Type IXd, p. 89). The combination of crescent and the disk suggests the protection of both the moon and sun gods, while the full and waning moon represents cyclic regeneration (Keel 1998: 70). The crescent and horns motif is also associated with the goddess Hathor, between whose horns are the disk of the sun.

The available evidence strongly suggests that these pendants bore some religious or cultic significance. Metal Pendants Type I.4a or Type I.4b (see below) may be the kind depicted on several figurines and statues, all dated to the Late Bronze Age (Macalister 1912c: pl. 221: 25; Fischer 1997: fig. 25) and during the Iron Age II as well, as on a figurine from Hazor (Yadin et al. 1960: pl. 76: 12) and from Phoenician Sarepta, dated to the 6th-5th centuries (see Markoe 1990a: fig. 15). All these iconographic depictions indicate that these pendants were worn on the neck or upper chest as a central ornament. Platt (1972: 222) has suggested that as they were often accompanied by other forms of precious metal jewelry as they were found in connection with hoards or offerings in temples. Their depiction on statues and figurines suggests that these crescents were also insignia of office that could well have been a part of the garb of the royal and religious officials.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Megiddo	Blue composition	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 77: 8	Excavator's dating.
Hazor	Bone	1	Stratum VI	8th c.	Yadin et al. 1961: pl. 188: 22	With ring and dot decoration.
Megiddo	Copper alloy	1	Stratum VII	12th c.	Loud 1948: pl. 214: 85	From a jewelry hoard in temple. Dating according to Mazar 2008.
Megiddo	Gold	1	Stratum VII	12th c.	Loud 1948: pl. 214: 83	From jewelry hoard in temple. Dating according to Mazar 2008.
Hazor	Copper alloy	4	Period 1B	14th c.	Yadin et al. 1961: pl. 278: 10-13; 343: 28-31	From Area H.
Megiddo	Copper alloy	1	Stratum VIII	15th-14th c.	Loud 1948: pl. 213: 63.	Excavator's dating.
Hazor	Silver	1	Period 2	15th c.	Yadin et al. 1961: pl. 270: 18	From Area H.
Hazor	Copper alloy	3	Period 2	15th c.	Yadin et al. 1961: pl. 270: 19-21; 343: 32-35	From Area H.
Megiddo	Silver	1	Stratum XIIIA or XII	18th c.	Loud 1948: pl. 207: 12	From hoard. Corroded. Excavator's dating.
Gezer	Silver	1	From 12th Dynasty hoard of ornaments.	19th-18th c.	Macalister 1912b: fig. 288: 12	Excavator's dating.

[231] A significant increase in astral cults appears to have taken place in Judah at the end of the Iron Age II, probably as a result of growing Assyrian influence (Keel and Uehlinger 1998: 102-109). However, the local use of the crescent symbol is much earlier and its use in jewelry does not appear to be necessarily associated with eastern astral cults of the 1st millennium.

Pendants Type I.4b – Crescent – with Tubular Stringing Attachment (Fig. 22: 16-25)

Wire crescents with a tubular stringing attachment at their center on the outer side. The crescent is made of a wire-like metal of rounded or square cross-section, usually found tapered at both tips and appearing in three general shapes: ovoid, a semi-circular arc or U-shaped. Some of these pendants are plain, some are decorated with grooves or bands around one or both edges, and some are decorated with 'X's or incised chevrons and bands. The characteristic feature of this form is the suspension loop that indicates that all these pendants were worn with the tips pointing downwards. The suspension loops may vary in size and method of manufacture – they may be plain, or collared at both ends, often appearing with incised ribs around their circumference. Most examples of this type are found in gold, though some are also found in copper alloy and silver.

Of similar concept, Type I.4b Metal Pendants are much more common than Type I.4a discussed above (McGovern 1985: Type VI.B.1, pp. 68-70) and have a long history throughout Western Asia and Egypt from the beginning of the 2nd millennium all the way through the Roman period (Petrie 1914: 23; Williams 1924: 184, pl. 28: 123; Rudolph 1995: 274;). This particular form with the tubular string attachment is typical primarily of the Late Bronze to Iron Age I (see Fig. 22: 16-23) and is relatively rare during the Iron Age II, when only a few examples are found, such as from Tell el-Farʿah (S) and Akhziv (see below). One of the examples from Akhziv bears a rounded suspension ring instead of a tubular stringing attachment. The variety and exquisite craftsmanship of these pendants during the Late Bronze Age and into the Iron Age I is generally not found during the Iron Age II; the few known Iron Age II examples are simple and debased in comparison to their Late Bronze Age-Iron Age I predecessors.[232] Use of his motif continues in the Phoenician west during the 7th-5th centuries, where it is found in gold and in silver such as at Tharros (Pisano 1987: Type IXd, p. 89, pls. 42g, 105: 16/22) appearing either as a crescent alone or a crescent and disk, both with tubular stringing attachments.

The following table presents only the local Iron Age II examples of Type I.4b, most of its numerous representations during the Late Bronze and Iron Age I have been collated elsewhere (see McGovern 1985: 68-70).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Silver	1	Tomb T.A. 72	9th-4th c.	Mazar 2001: fig. 66: 20	With suspension ring instead of tube.
Akhziv (er-Ras Cemetery)	Silver	1	Tomb ZR XXIX	9th-7th c.	Dayagi-Mendels 2002: fig. 4.21: 62	Dating according to Dayagi-Mendels.
Tell el-Farʿah (S)	Gold	1	Tomb 229	10th-9th c.	Petrie 1930: pl. 39: 456	With ribbed tubular stringing attachment. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.

Pendants Type I.6 – Bell (Fig. 22: 26)

Small bells, between two to ten cm in height, either cast or formed from sheet-metal into a doming block These items are usually found with a suspension ring on top, indicating that they were hung as a pendant. Though the clappers, or inner striking rods, of most of the excavated examples are missing, the few known examples, such as from Lachish and from Megiddo, indicate the use of an iron rod as a clapper alongside of the bell made of copper alloy.

Small bells may have been used around the necks of small animals, such as sheep or goats (Waldbaum 1983: 42) or may have been worn on toddlers in a similar manner to track their movements (Petrie 1927: 24). In ancient Egypt, Petrie (1914: 28) has noted that small bells were worn by children against the evil eye and are found from the 26th Dynasty to Roman times.[233] Small bells may have also been used in cultic rituals practices (Mazar and Panitz-Cohen 2001: 223). Small bells are also known in Assyria (Curtis and Reade 1995: 166-167), where they appear to have been used primarily around the necks of horses, such as is shown in the reliefs of the palace of Ashurbanipal (Spear 1978: figs. 109-113). Their use on horses is also attested in the Old Testament (Zech. 14: 20). Such bells appear to have been popular in Iran during the 1st millennium, primarily during the 8th-5th centuries where they formed a part of composite creations or larger examples that were employed individually (Muscarella 1988: 280-281, 384, 427-428).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Copper alloy and Iron	1	Tomb 106	7th-6th c.	Tufnell 1953: pl. 54: 19	Mixed tomb. With iron clapper. Excavator's dating.

232 Yadin has identified this form, generally depicted as upside-down 'U'-shaped with two bulbous ends as a divine symbol depicting a yoke of the sun-god's chariot, found depicted on royal monuments of Kilamuwa and Barrakib at Zinjirli (Yadin 1970b: 202-203; Ornan 2005a: 227-231).

233 For similar small pendant-bells of Roman date, see Tufnell 1953: pl. 57: 48 [Lachish], McCown 1947: fig. 65: 3-4 [Tell en-Naṣbeh] and Reisner, Fisher and Lyon 1924: fig. 235 [Samaria].

Tel Batash	Copper alloy	1	Stratum II	7th c.	Mazar and Panitz-Cohen 2002: 222-223, pl. 39: 10, photo 151	Clapper missing.
Megiddo	Copper alloy and Iron	1	Stratum IV	9th-8th c.	Lamon and Shipton 1939: pl. 77: 13	With iron pin to hold the clapper, missing. Dating according to Mazar 2008.
Tel Beth-Shean	Copper alloy	1	Upper Level V	10th-9th c.	Unpublished	UM reg. no. 29-108-67
Akhziv (er-Ras Cemetery)	Copper alloy	1	Tomb ZR LV	Unclear	Dayagi-Mendels 2002: fig. 4.34: 1	Suspension ring and clapper missing.
Lachish	Copper alloy	1	Surface find	---	Tufnell 1953: pl. 58: 28	Clapper missing.
Tel ʿIra	Copper alloy	1	Surface find	---	Goldsmith, Ben Dov and Kertesz 1999: fig. 14: 20	Clapper missing.
Akhziv cemetery	Copper alloy	1	Tomb 2	Iron Age	Unpublished	From 1941 Makhouly excavations.

Pendants Type I.7 Composite – Metal Hoop and Bead (Fig. 22: 27-28)

Type I.7 is a catch-all category in which no two items are exactly alike, but the general idea involves use of a metal hoop with a suspension ring or a wire that also holds a bead, which can occur in a variety of materials. These objects may have also functioned as pendants hung from earring hoops, as is shown in an example from a mixed tomb at Tharros (Pisano 1987: pl. 39: e), wherein a gold hoop is threaded through a carnelian bead, all suspended from an earring hoop. Composite creations such as these, though not common, are characteristic of the end of the Iron Age II and into the Persian period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Silver and Faience	2	Tomb 2001	6th-4th c.	Herzog and Levy 1999: fig. 2: 9-10	---
Tel Beth-Shemesh	Limestone and Copper alloy wire	1	Tomb 14	6th c.	Grant and Wright 1938: pl. 48: 26	Excavator's dating.

Pendants Type I.10 – Double Concentric Spiral Wire (Fig. 22: 29)

Pendants formed by a long strand of wire, coiled from both ends into two flat concentric spirals, the wire in between the two resulting coils then bent in order to provide a means for suspension. The Iron Age example of this type from Tawilan (Fig. 22: 29), bears additional rounded sheet-gold disks on each spiral, decorated by a cluster of gold granules at its apex and a line of granules around its border.

The main feature of this pendant, i.e., the double wire spirals, has a long history beginning in the 3rd millennium, such as at Ur in Mesopotamia (Maxwell-Hyslop 1971: pl. 22; Pittman 1998: 122, no. 95) and Troy in Anatolia (Antonova, Tolstikov and Treister 1996: 106, item 116; and see further references therein), continuing up to modern times (Ogden 1995: 74). These pendants are found in silver and gold, less often in copper alloy, and may occur as double or quadruple spirals, wherein two double spirals are connected together side by side. Examples are found at Ashur, Tomb 45, dated to the 13th century (Haller 1954: pl. 34), as well as in the silver hoard from Tepe Nush-I-Jan in Iran, dated to the 7th century (Stronach 1969: pl. 8a-b). This form is also found at Cyprus from Hala Sultan Tekke, dated to the 12th century (Åström et al. 1983: 12, fig. 7) and Lefkandi in Greece, dated to the 9th century (Popham and Sackett 1979: pl. 231b). Locally, this form appears during the middle of the 2nd millennium and continues into the Iron Age II. An un-provenanced Late Bronze Age copper alloy statuette from Lebanon shows such a pendant prominently displayed upon the chest of a seated female divinity (Cornelius 2004: fig. 14), strongly indicating a cultic significance. The interpretation of this symbol has been variously explained as a chariot yoke, a headband or wig, scales, a Hittite ideogram meaning 'life' and possibly even a fertility symbol, representing the swaddling clothes of a newborn or the womb of Ninhursag, a Mesopotamian deity (van Buren 1945: 106-108; Frankfort 1970: 108, n. 7; Maxwell-Hyslop 1971: 106). The spiral motif and its derivative *guilloche* pattern are not restricted to jewelry and are highly prominent in the ancient iconography of the Near East and Greece where it may be seen as a symbol of sovereignty and power (Hiller 2005). However, as noted by Ogden (1995: 74) this type was "widespread and long-lived, as well as being simple enough to have been 'reinvented' at various times and places".

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Kh. an-Nuhās	Copper alloy	1	Stratum A1	10th-7th c.	Levy et al. 2005: 467, fig. 29B	Figurine with double spiral wings.

Wadi Fidan	Copper alloy	1	Grave 371	11th-9th c.	Levy et al. 2005: 467, fig. 29A	---
Tawilan	Gold	1	From hoard	11th-9th c.	Ogden 1995: fig. 8.27	With sheet-gold domes and granular decoration covering each spiral.
Tell el-Farʿah (S)	Unclear	1	Tomb 821	11th-10th c.	Laemmel 2003: pl. 222: 821/S2	Dating according to Laemmel 2003: Table 5.
Madaba	Copper alloy	1	Tomb	13th-11th c.	Harding 1953a: pl. 5: 195	Poor photograph. Disturbed tomb. Excavator’s dating.
Lachish	Copper alloy	1	Burial pit	14th c.	Tufnell 1958: pl. 25: 44	Found as an attachment on an earring. Excavator’s dating.
Tell el-ʿAjjul	Copper alloy	1	Governor’s tomb	15th-11th c.	Petrie 1933: pls. 7-9	Excavator’s dating.
Yiftah’el	Gold	2	Burial cave	19th-15th c.	Barda and Braun 2003: fig. 13: 16, 17	---

Pendants Type I.12 – Amphora – Shaped (Fig. 22: 30-32)

Small pendants in the form of an amphora, equipped with a suspension loop or tubular stringing attachment on top. Most of these pendants are solid-cast, though a few, such as an example from ʿAtlit and another from Akhziv, are hollow, being formed in sheet-metal from several parts.

This type begins in the Iron Age II, such as at Akhziv, and becomes more common at the very end of the Iron Age II and into the Persian period. Most examples are found at coastal sites, suggesting a Phoenician orientation for this type that is also found in Cyprus (Csornay-Caprez 2000: 91, pl. D: 156) and at Tharros during the 5th-3rd centuries (Pisano 1987: Type VIa, p. 87, pl. 42: e).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Gold	1	Tomb L21	5th-4th c.	Johns 1933: fig. 8, pl. 23: 549	Hollow. Identified as a lotus bud. Mixed tomb. Excavator’s dating.
ʿAtlit	Copper alloy	1	Tomb L21B	5th-4th c.	Johns 1933: pl. 25: 644	Solid. Identified as a closed lotus bud or acorn. Excavator’s dating.
Tel Michal	Silver	1	Strata XI-VI	6th-4th c.	Muhly and Muhly 1989: fig. 25: 10: 206	Solid
Kamid el-Loz	Copper alloy	1	Grave 10	6th-4th c.	Hachmann and Penner 1999: pl. 36: 4	Solid
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 23: 6	---
El-Jib (Gibeon)	Copper alloy	1	Unclear	Unclear	Unpublished	UM reg. no. 62-30-841

Pendants Type I.13 – Pazuzu (Fig. 22: 33)

A small, solid-cast bronze[234] anthropomorphic statuette depicting a demonic-style head, on top of which is a looped hole for suspension. The neck is elongated, terminating in a wide flaring base enabling the statuette to be left standing upright. The head bears two bulging eyes, a wide nose and protruding cheeks, a wide mouth, large ears and pointed chin. Two parallel ribbed protrusions running from the eyes and along the back of the head to the nape may represent long horns.

This solitary example from Tel Beth-Shean has been identified as a debased sub-type of an Assyrian-style amulet depicting the demon *Pazuzu* (Heessel 2002, Ornan 2006a;). *Pazuzu* was a fierce but benevolent demonic figure found rendered in stone, clay and metal in Assyria and Babylonia during the 8th-6th centuries. This amulet was used to protect against destructive evil forces and illness (Ornan 2006a: 517) and was specifically entreated to protect pregnant women and mothers of newborn children (Heessel 2002: 123-130). The stringing loop of the present example from Tel Beth-Shean indicates that it was meant to have been hung as an amulet and is a clear indication of Assyrian influence at the site during the first half of the 1st millennium.[235]

[234] The object from Tel Beth-Shean underwent chemical analysis by Dr. S. Shalev of the Weizmann Institute that determined it to have been made of a relatively low-tin bronze with a significant amount of lead (Ornan 2006a: n. 2).

[235] Though this object was found in a Hellenistic stratum (Stratum P-5a) immediately above a 8th century destruction (Stratum P-7), it is probably to be associated with Stratum P-7 or possibly Stratum P-6, an enigmatic squatter occupation immediately following the destruc-

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Beth-Shean (Mazar excavations)	Bronze	1	Stratum P-5a	8th c.	Ornan 2006a	Rare

Pendants Type I.14 – Round Medallion, Composite (Fig. 22: 34-36)

Round pendants with a stringing attachment, usually of tubular form, with wire collars at both ends. The examples from Tel Miqne-Ekron and Akhziv bear two stringing attachments at opposing ends and resemble a 'wristwatch'. These pendants may have served as a centerpiece, possibly for a bracelet, while most other examples of this type were hung, probably serving as centerpieces within larger creations.

The concept of setting stones in a mount is well-known since the Middle Bronze Age, such as in Type III.6a Small Rings. However, use of this technique in a pendant or a centerpiece appears primarily in the Iron Age II. The recurring use of highly polished and transparent rock crystal in many of these pendants suggests use of this material as a kind of 'lens'. The setting in a mount of a transparent, colorless quartz lens is not very common and in New Kingdom Egypt, was sometimes used in order to elaborately protect or even magnify an image underneath (Terrace and Fischer 1970: 70, 72). Plano-convex 'lenses' of rock crystal are known from the 9th century at Crete, where they have been found in the 'Tekke tomb' (see Hoffman 1997: 201-203). Transparent crystal lenses have been proposed as being used for magnification for intricate work in seal cutting (Sines and Sakellarakis 1987) but it has been shown that they distort too much to be of any real assistance (Moorey 1999: 105). Most of these stones were thus no more than decorative inlays and not intended for magnification of any kind (Boardman 1996: 9). The use of crystals and lenses for magnification is generally held to be an invention of the Middle Ages (Moorey 1999: 105) or the classical periods at the earliest (Plantzos 1997).

In the southern Levant, such composite round medallions are found at Akhziv and Miqne-Ekron, indicating a Phoenician association.[236] Similar pieces, not always with a rock inset, are known throughout the Phoenician world such as in gold at the Tharros necropolis, dated to the 7th-6th centuries (Pisano 1987: pl. 42h, Type Xa, p. 89) and in gold at Cadiz, dated to the 6th-4th centuries (Perdigones Moreno et al. 1990: figs. 35: 2, 7, 9; 36: 3) and Carthage (Quillard 1979: pls. 4-5, 14: 17). The example from Tel Shor is somewhat different, consisting of a hollow pendant depicting a crescent with no inlay and a bulge instead. This piece appears to represent a lunar crescent and disk.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Shor	Silver	1	Burial	6th-4th c.	Golani forthcoming G	Corroded.
Akhziv cemetery	Rock Crystal (missing mount)	1	Tomb ZR 13	6th-5th c.	Dayagi-Mendels 2002: fig. 4.11: 56	Dating according to Dayagi-Mendels.
Tel Miqne-Ekron	Silver and Rock Crystal	1	Stratum IB	7th c.	Golani and Sass 1998: fig. 14: 7	With two opposing tubular stringing attachments. From sealed hoard.
Akhziv cemetery	Gold and Crystal	1	Tomb no. 1, Phase 2	9th-7th c.	Mazar 2004: fig. 23: 7	---
Akhziv cemetery	Gold, Silver and Glass	1	Tomb no. 1, Phases 1-2	9th-7th c.	Mazar 2004: fig. 23: 10	Unclear which portion is gold and which is silver. Stringing loop is of a different technique than other examples.
Akhziv cemetery	Gold and Crystal	1	Tomb no. 1, Phase 2	9th-7th c.	Mazar 2004: fig. 23: 20	Stringing attachment missing.
Akhziv cemetery	Silver	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 23: 9	Stone missing.
Akhziv cemetery	Silver and Stone	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 23: 8	---

tion of Stratum P-7. Though there is no occupational level associated with the Assyrian period at Tel Beth-Shean (even though the Assyrians were apparently the perpetrators of the 8th century destruction of Stratum P-7), this object is a clear indication of Assyrian influence during the first half of the 1st millennium, possibly brought in by the Assyrian attackers or used by the subsequent squatters of the Stratum P-6 occupation.

236 An object from Tell el-Far'ah (S) of similar form and described as made of silver originates from Tomb 759 of the Persian period (Starkey 1930: Type F: 30).

Akhziv cemetery	Rock Crystal (missing mount)	1	Tomb no. 1, Phase 1	10^{th}-9^{th} c.	Mazar 2004: fig. 23: 21-24	---
Akhziv cemetery	Silver	1	Tomb ZR 55	Unclear	Dayagi-Mendels 2002: fig. 4.34: 2	With two tubular stringing attachments and no back-plate.

7.4.2. Pendants Type II – Stone

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
II.1	Elongated Drop	Chalcolithic onwards	Very common	Fig. 23: 1-4
II.1a	Elongated Drop with Bulbous Bottom	Iron Age I-II transition	Rare	Fig. 23: 5
II.2a	Pyramidal-Triangular	Chalcolithic onwards	Common, often found used as a seal.	Fig. 23: 6-7
II.2b	Inverted Triangular	Locally-Iron Age II – Persian Periods	Northern origin?	Fig. 23: 8-9
II.2c	Inverted Triangular with Ribbed Decoration	Late Iron Age II	Very rare	Fig. 23: 10
II.3	Truncated Conical	Iron Age I-II	Often found used as a seal.	Fig. 23: 11-12
II.4	Lotus Bud	LB – Persian Periods	Common	Fig. 23: 13-17
II.5	Axe or Celt-Shaped	MB – Persian Periods	Common	Fig. 23: 18-20
II.6	Rectangular	LB – Persian Periods	Common	Fig. 23: 21
II.7	Palmette	LB	Rare	---
II.8	Lozenge-Shaped	Iron Age II	Rare	Fig. 23: 22
II.9	Weight-Shaped	LB – Persian Periods	Uncertain if weight or amulet.	Fig. 23: 23-24
II.10	Oblate Circular	MB – LB?	Very rare	---
II.11	Goblet-Shaped	Persian Period	Rare	---

Pendants Type II.1 – Elongated Drop (Fig. 23: 1-4)
Oval or drop-shaped elongated stone pendants.

Elongated drop pendants are a very common form that may appear in many varieties differing in material, workmanship and stylistic features. Such pendants may be crudely made, exhibiting no more than a perforation on a naturally occurring drop-shaped object, or a naturally occurring stone may be re-shaped and smoothed into an elongated drop shape (McGovern 1985: 73, Type VI.F.2.). These pendants have a time span and distribution from prehistoric to modern times (see McGovern 1985: 74, n. 43) and may be made from almost any kind of stone.

Pendants Type II.1a – Elongated Drop with Bulbous Bottom (Fig. 23: 5)
A rare form, similar to Type II.1 Stone Pendant, but with a swollen, bulbous bottom that may have been purposefully shaped, or may have been a result of the natural shape of the original stone.[237]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Beth-Shemesh	Unidentified Stone	1	Tomb 1	10^{th} c.	Mackenzie 1912-1913: pl. 30a: 11	Excavator's dating.
Tel Ashdod	Hematite	1	Stratum XI	11^{th} c.	Golani and Ben-Shlomo 2005: fig. 4.1: 6	---
Tel Beth-Shean	Malachite	1	Level IX	14^{th} c.	Unpublished	UM reg. no. 32-15-352
Tyre	Black stone	1	Stratum XX	EB II-III	Bikai 1978: pl. 56: 25	---

Pendants Type II.2a – Pyramidal – Triangular (Fig. 23: 6-7)
Triangular-shaped rounded stone pendants with a stringing hole drilled from two sides near the apex. This type is also described as a 'pyramidal' pendant and is a common form that may appear in various types of stone throughout many periods (Beck 1928: 24, Type XXII.B.4.a), often serving as a seal found engraved on its bottom (see Keel, Shuval and Uehlinger 1990).

[237] More examples of this type may actually exist than are noted here, simply because poor documentation in the existing publications does not always give a clear definition of subtle morphological variants.

Pendants Type II.2b – Inverted Triangular (Fig. 23: 8-9)

Flat triangular pendants, carved in a broad 'V' resembling a boomerang, hung with the apex pointing downwards. The perforation is found lengthwise between the two corners of the base or transverse bar, which is often slightly concave. These pendants are often made of semi-precious banded stone, such as banded agate or onyx. All examples are carefully carved and polished, the variegation of the stone, usually ranging from opaque white to dark brown, is well exploited with the layers appearing obliquely or horizontally.

Though it has a local chronological range spanning the entire Iron Age II and into the Persian period, this type of pendant is outstanding for not only its exquisite workmanship and polishing of semi-precious banded stone, creating a very aesthetical object, but also for its unique form and distribution. Such pendants in stone and similar forms in gold are known from controlled contexts at Ur and Uruk in Mesopotamia, Tepe Hissar in Iran, Georgia, Anatolia and Romania where they are dated from the middle of the 3rd into well into the 2nd millennium (see Rudolph 1995: 35, 45-46 for a full listing and references). The origin of this form thus appears to have been from Mesopotamia or Anatolia to the north, where it is found already during the 3rd millennium (Ogden 1982: 109). The limited amount of local examples may be seen as imports from these regions or as heirlooms.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
En Gedi, Morinaga Cave	Agate	5	Burial cave	6th-4th c.	Shai, Porath and Eshel 2007: photo 9	---
Tel Shor	Agate	1	Burial	6th-4th c.	Golani forthcoming G	From individual tomb.
Tel Michal	Carnelian? (with bands, possibly agate)	1	Tomb 2007	6th-4th c.	Herzog and Levy 1999: fig. 4: 10	From individual cist tomb. Part of a necklace along with scaraboid carnelian beads.
Tel Be'er Sheva	Agate	1	Stratum IV	9th c.	Golani forthcoming F	---
Lachish	Onyx – brown banded	2	Burial cave 4005	10th-6th c.	Tufnell 1953: pl. 67: 115	Mixed tomb. Excavator's dating.
Tel Beth-Shean (Mazar Excavations)	Agate	1	Stratum S-3a	12th c.	Golani 2009: fig. 11.3: 3	---
Tell el-Farʿah (S)	Carnelian	3?	Tombs 643, 649	12th c.	Starkey 1930: Type W: 60, 65, 70	From single-period burials. Dating according to Laemmel 2003: Table 3.
Tel Yavne	Onyx	1	Ground surface	---	Unpublished	R. Kletter, pers. comm..
Tell Jemmeh	Carnelian	1	Unclear	Unclear	Petrie 1928: pl. 22: far upper right	---

Pendants Type II.2c – Inverted Triangular with Ribbed Decoration (Fig. 23: 10)

A triangular limestone pendant pierced through the base of the triangle, which was hung upside down. An incised concentric groove decoration is found near two opposing ends of the triangle.

A rare form, so far known only from Tel Miqne-Ekron.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Limestone	1	Stratum IB	7th c.	Golani forthcoming A	Rare

Pendants Type II.3 – Truncated Conical (Fig. 23: 11-12)

Stone pendants of elongated conical form with a perforation through a tapering, truncated or rounded end.

Occurring in a wide variety of stones, these pendants may also have served as seals that are engraved on the bottom, as in an example from Tel Batash. Truncated conical or pyramidal seals are generally held to be typical of the Iron Age I (see Keel, Shuval and Uehlinger 1990); the general form is prevalent throughout the Iron Age I-II periods.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell es-Saʿidiyeh	Pink Stone	1	Grave 27	6th c.	Tubb 2007: fig. 15: 6	With rounded top and engraved seal at bottom

Lachish	Carnelian (brown)	2	Burial cave 1002	8th c.	Tufnell 1953: pl. 67: 140	Excavator's dating.
Lachish	Hematite	1	Burial cave 1002	8th c.	Tufnell 1953: pl. 67: 131	Excavator's dating.
Lachish	Carnelian (brown)	2	Burial cave 1002	8th c.	Tufnell 1953: pl. 67: 132	Excavator's dating.
Tel Beth-Shemesh	Unidentified Stone	5	Tomb 1	10th c.	Mackenzie 1912-1913: pl. 29b: 2	Excavator's dating.
Tel Be'er Sheva	Chalk	1	Stratum VII	10th c.	Herzog 1984: fig. 25: 3, pl. 14: 13; Golani forthcoming F	---
Tel Miqne-Ekron	Unidentified Dark Stone	1	Stratum IVA-B	11th-10th c.	Golani forthcoming A	Partial
el-Jib (Gibeon)	Unidentified Dark Stone	1	Tomb 3	11th-10th c.	Unpublished	UM reg. no. 62-30-190
Tel Batash	Unidentified Stone	1	Stratum V	11th c.	Kelm and Mazar 1995: fig. 5.8	With depiction of lyre player on base.
Tel Miqne-Ekron	Chalkstone	1	No context	---	Golani forthcoming A	Partial
Tel Miqne-Ekron	Selenite	1	No context	---	Golani forthcoming A	Partial

Pendants Type II.4 – Lotus Bud (Fig. 23: 13-17)

Pendants sculpted in the form of a lotus bud with a stringing hole drilled through the top. These pendants are usually made of carnelian stone, though the use of other kinds of stone in addition to faience, glass, gold, bone, ivory and terracotta is also known (see McGovern 1985: 47-48; Herrmann 2006: 231-233, Cat. Nos. 452-464).[238] This type is found in variety of forms, ranging from naturalistic depictions of lotus buds to schematic representations. These pendants may be categorized into two main varieties: flat-backed (McGovern Type IV.F.5.a) and a more common, fully rounded type (McGovern Type IV.F.5.b; Beck 1928: 29, Type XXVI.B.3.d). Both types are contemporary from the Late Bronze Age to the Iron Age II.

Lotus bud pendants are of Egyptian inspiration and are very common during the Late Bronze Age II period at the time of increased Egyptian involvement in Canaan (McGovern 1985: 47-48). For the Egyptians, the sun rose from the lotus flower during the creation of the universe and the hope of future regeneration was encapsulated within the lotus bud (Rudolph and Rudolph 1973: IX-X). Noting that the vast majority of these pendants are made of red carnelian, some scholars have claimed that these pendants actually represent red poppies and not lotus buds (Ben-Basat 2011: 84). The use of red carnelian, however, is common in stone beads and pendant manufacture and is probably symbolic of its obvious analogy to blood and life. The example from Tel Beth-Shean was found drilled twice at its narrow end, after the original, first perforation did not succeed. This highlights that these pendants were important enough to have been fixed. McGovern sees this type as a Late Bronze Age phenomenon[239] with only sporadic examples continuing into the Iron Age II. While most Type II.4 Stone Pendants are associated with the Late Bronze Age and continue into the Iron Age I as well, the amount of Iron Age II examples is more than sporadic. The following table lists only those examples of the Iron Age II, numerous examples of the Late Bronze Age and Iron Age I have been compiled elsewhere (McGovern 1985: 47-48). The Iron Age II forms are essentially identical to those of the Late Bronze Age and Iron Age I, some of which are also presented here (see Fig. 23: 13-17). Use of this pendant continued throughout the Iron Age II and is rare during the Persian period, where unusual materials, such as terracotta, are also used, suggesting that the significance of the material (carnelian) from which the majority of these pendants were made, had been lost by this time.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Ḥesi	Terracotta	1	Stratum VD	6th-5th c.	Bennet and Blakely 1989: fig. 209: 1	Full-bodied.
Kadesh Barnea	Carnelian	1	Strata 1-2	7th-4th c.	Gera 2007: pl. 13.7: 36	Full-bodied.

[238] The vast majority of these pendants are usually made of carnelian stone. During the Iron Age II, only one example of this type was found made of faience, while another example dated to the early Persian period is reported as terracotta. Because the use of materials other than stone for this type is generally rare, all known Iron Age II examples have been here grouped together.

[239] Petrie also assigns this amulet to the 18th-19th Dynasties (1914: 51, pl. 43: 271).

Tel Ashqe-lon	Carnelian	1	Grid 50, Phase 7	7th c.	Park 2011: fig. 15.3: 20324	Full-bodied.
Tel Ashqe-lon	Carnelian	1	Grid 50, Phase 7	7th c.	Park 2011: fig. 15.3: 44245	Flat-backed.
Megiddo	Carnelian?	1	Stratum II	7th c.	Lamon and Shipton 1939: pl. 90: 7	Full-bodied. Excavator's da-ting.
Tel Beth-Shemesh	Unclear	1	Tomb 5	8th-7th c.	Mackenzie 1912-1913: pl. 43: 8	Full-bodied. Excavator's da-ting.
Megiddo	Carnelian	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 90: 20	Full-bodied. Excavator's da-ting.
Lachish	Carnelian	1	Burial cave 1002	8th c.	Tufnell 1953: pl. 67: 145	Full-bodied. Excavator's da-ting.
Tel Beth-Shean	Carnelian	1	Level IV	8th c.	Unpublished	Full bodied, drilled twice. UM reg. no. 29-104-338
Akhziv cemetery	Carnelian	1	Tomb ZR XXIX	9th-7th c.	Dayagi-Mendels 2002: fig. 4.21: 65	Full-bodied. Dating according to Dayagi-Mendels.
Megiddo	Jasper?	1	Level H-3	9th-8th c.	Sass 2000: fig. 12.29: 18	Full-bodied. Excavator's da-ting.
Lachish	Carnelian	2	Tombs 224, 218	10th-9th c.	Tufnell 1953: pl. 67: 143	Full-bodied. Excavator's da-ting.
Akhziv cemetery	Carnelian	1	T.A. 77	10th-9th c.	Mazar 2001: fig. 34: 13	Flat backed.
Akhziv cemetery	Black stone	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 22: 15	Full-bodied.
Akhziv cemetery	Carnelian	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 22: 14	Full-bodied.
Megiddo	Faience	1	Stratum V	10th-9th c.	Lamon and Shipton 1939: pl. 91: 52	Full-bodied. Dating according to Mazar 2008.
Megiddo	Carnelian	1	Stratum V	10th-9th c.	Loud 1948: pl. 216: 126	Full-bodied. Dating according to Mazar 2008.
Megiddo	Carnelian	1	Stratum V	10th-9th c.	Lamon and Shipton 1939: pl. 90: 48	Full-bodied. Dating according to Mazar 2008.
Tel Beth-Shemesh	Carnelian?	1	Tomb 1	10th c.	Mackenzie 1912-1913: pl. 30b: 29	Full-bodied. Excavator's da-ting.

Pendants Type II.5 – Axe or Celt – Shaped (Fig. 23: 18-20)

Axe or celt-shaped pendants[240] with one broad and tapering end, the other end is square or rectangular and bears a perforation for stringing.

These pendants are common throughout the Late Bronze and Iron Ages, less so during the Middle Bronze Age. All examples are well fashioned and smoothed, suggesting that the form of this pendant was highly valued. Most examples are made of semi-precious stone, such as carnelian or hematite, while one of the earliest examples from Tell el-ʻAjjul is made of lapis lazuli, rarely found in local contexts.

At Gezer, Macalister (1912b: 107) noted that 'celt-shaped bead pendants', became popular from the Third Semitic period (Late Bronze Age?) to the Hellenistic period, suggesting that there were many more such pendants recovered in the excavations than were actually published. In ancient Egypt, celt-shaped stone implements were used in the burial preparation rituals to open the mouth of the deceased and are common until the 26th Dynasty (Petrie 1914: 28, pl. 15: 123). The form is held to be sacred and in the classical world, was considered potent in the conquest of cities and fleets (Petrie 1914: 28).[241]

Pendants Type II.6 – Rectangular (Fig. 23: 21)

Rectangular-shaped pendants with a stringing hole at one end. Most of these are flat; leading many to identify them as honing or whetstones, though their use as pendants is also possible.

Such pendants are common from the Late Bronze to the Persian periods and are made from a wide variety of stones.

240 These have also been termed in the literature as 'small anchor-shaped pendants' (Daviau 2002: 31).
241 Celt-shaped stones were also termed 'thunderstones' in Italy and Northern Europe where they were worn as charms against lightning and evil forces (Petrie 1914: 28).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Jemmeh	Carnelian	1	Pit	6^{th}–4^{th} c.	Golani forthcoming E	---
Kamid el-Loz	Unidentified Stone	1	Grave 76	6^{th}-4^{th} c.	Hachmann and Penner 1999: pl. 36: 23	---
Tel Batash	Limestone	1	Stratum II	7^{th} c.	Mazar and Panitz-Cohen 2002: pl. 51: 7	---
Tel Be'er Sheva	Unidentified Stone	1	Stratum II	8^{th} c.	Aharoni 1973: pl. 70: 4; Golani forthcoming F	Partial. Large (over 10 cms long).
Lachish	Sandstone	1	Pit 507	8^{th} c.	Tufnell 1953: pl. 56: 19	Excavator's dating.
Lachish	Limestone	1	Burial cave 1002	8^{th} c.	---	Excavator's dating.
Hazor	Unidentified Stone	1	Stratum VI	8^{th} c.	Yadin et al. 1961: pl. 188: 16; 361: 7	---
Lachish	Gray limestone	1	Tomb 116	9^{th}-7^{th} c.	---	Mixed tomb. Excavator's dating.
Lachish	Gray Marble?	3	Tomb 120	9^{th}-7^{th} c.	---	Mixed tomb. Probably limestone. Excavator's dating.
Megiddo	Sandstone	1	Stratum IV	9^{th}-8^{th} c.	Lamon and Shipton 1939: pl. 101: 9	Dating according to Mazar 2008.
Lachish	Limestone	6	Tomb 218	10^{th}-9^{th} c.	Tufnell 1953: pl. 67: 136-138	Excavator's dating.
Megiddo	Unidentified Stone	1	Stratum V	10^{th}-9^{th} c.	Lamon and Shipton 1939: pl. 90: 51	Dating according to Mazar 2008.
Megiddo	Schist	1	Stratum V	10^{th}-9^{th} c.	Lamon and Shipton 1939: pl. 101: 7	Dating according to Mazar 2008.
Lachish	Hematite	1	Tomb 521	10^{th} c.	Tufnell 1953: pl. 56: 21	Excavator's dating.
Kh. Abu Mussarah	Carnelian	1	Burial/Habitational cave	11^{th}-7^{th} c.	Golani 2004b: pl. 14: 2	Partial. Mixed context.
el-Jib (Gibeon)	Hematite?	2	Tomb 3	11^{th}-10^{th} c.	Pritchard 1963: fig. 73 (at bottom)	UM reg. no. 62-30-191
Tell el-Far'ah (S)	Hematite	1	Tomb 133	11^{th}-10^{th} c.	Petrie 1930: pl. 29: 269	Dating according to Laemmel 2003: Table 1.
Tel Masos	Hematite	1	Stratum III	12^{th} c.	Fritz and Kempinski 1983: pl. 172: 11, 105: 8	Dating according to Mazar 2008.
Gezer	Unidentified Stone	1	Strata XIV-XIII	13^{th}-12^{th} c.	Dever 1986: pl. 54: 11	---
Tell el-Far'ah (S)	Unidentified Stone	1	Tomb 914	13^{th} c.	Starkey and Harding 1932: pl. 47: lower right	Dating according to Laemmel 2003: Table 6.
Tel Beth-Shemesh	Unidentified Stone	1	Stratum IV	14^{th}-13^{th} c.	Grant and Wright 1938: pl. 52: 14	Excavator's dating.
Megiddo	Serpentine	1	Ground surface	---	Lamon and Shipton 1939: pl. 101: 6	---
Shiloh	Limestone	1	Unstratified	---	Sass 1993: 266, fig. 10.1: 5	---
Tel Beth-Shemesh	Sandstone	1	Room 125	Unclear	Unpublished	UM reg. no. 61-14-590
Tel Beth-Shemesh	Limestone	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-1718
Tel Beth-Shemesh	Unidentified stone	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-1723
Tel Beth-Shemesh	Unidentified stone	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-2384

Pendants Type II.8 – Lozenge – Shaped (Fig. 23: 22)

Lozenge-shaped pendants. The upper portion is truncated, widening out in the middle and tapering to a point at their bottom.

An uncommon type found so far at Akhziv, though the simplicity of this form would make its association to earlier or later periods likely as well.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv (er-Ras Cemetery)	Jasper? (green)	1	Tomb ZR IX	10^{th}-7^{th} c.	Dayagi-Mendels 2002: fig. 4.7: 104	Dating according to Dayagi-Mendels.

Pendants Type II.9 – Weight – Shaped (Fig. 23: 23-24)

Grain or pyramidal-shaped stones with one perforated end, within which is a metal ring for suspension, usually of copper alloy.

These objects may have functioned as weights, though the addition of a suspension ring indicates that they may also have been hung as a pendant, possibly an amulet. They are usually made of stone, though some are of copper alloy. The ring is always made of metal, usually copper alloy or iron. In favor of their interpretation as weights, the example from Tel Ashdod was found upon a floor along with two scale pans of a small balance weight.

This type is found primarily in the region of Phoenicia while similar forms are also known from Egypt (see Kletter 1994: 39, tables 3-4). Locally it is found from the Late Bronze Age until the Persian period. During the Iron Age II, this type may be associated with the Phoenicians and is regarded as a 'Phoenician' type of weight (Kletter 1994). Local examples are plentiful (see below) while more are found in Syria/Lebanon such as at Tell Sukas, Hama and Ugarit (see Kletter 1994: table 4 for references).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Kamid el-Loz	Serpentine and Copper alloy	1	Grave 76	6^{th}-4^{th} c.	Hachmann and Penner 1999: pl. 36: 24	---
Tel Beth-Shemesh	Limestone and Copper alloy	1	Tomb 14	6^{th} c.	Grant and Wright 1938: pl. 48: 26	Excavator's dating.
Akhziv (er-Ras Cemetery)	Hematite and Copper alloy	1	Tomb ZR XXXV	7^{th}-6^{th} c.	Dayagi-Mendels 2002: fig. 4.26: 8	45.71 gr. Copper alloy ring. Dating according to Dayagi-Mendels.
Megiddo	Unidentified stone and Copper alloy	1	Stratum III	8^{th}-7^{th} c.	Lamon and Shipton 1939: pl. 88: 20	Copper alloy ring. Excavator's dating.
Megiddo	Unidentified stone and Copper alloy	1	Stratum III	8^{th}-7^{th} c.	Lamon and Shipton 1939: pl. 88: 20	Copper alloy ring. Excavator's dating.
Tel Ashdod	Copper alloy	1	Stratum IX	9^{th}-8^{th} c.	Dothan and Porath 1982: fig. 12: 2; pl. 15: 6	49.76 gr. Found along with two scale pans on a floor.
Megiddo	Copper alloy	1	Stratum IV	9^{th}-8^{th} c.	Lamon and Shipton 1939: pl. 104: 42	22.9 gr. Copper alloy ring. Dating according to Mazar 2008.
Ḥ. Rosh Zayit	Copper alloy	1	2^{nd} Phase	9^{th} c.	Kletter 1994: 39, fig. 1: 7	40.43 gr. Suspension ring missing.
Akhziv (er-Ras Cemetery)	Unidentified stone and Copper alloy	1	Tomb ZR XXXVI	10^{th}-7^{th} c.	Dayagi Mendels 2002: fig. 4.27: 125	With traces of cloth. Copper alloy ring. Dating according to Dayagi-Mendels.
Akhziv (er-Ras Cemetery)	Unidentified stone and Copper alloy	1	Tomb ZR XXXVI	10^{th}-7^{th} c.	Dayagi Mendels 2002: fig. 4.27: 125	With traces of cloth. Copper alloy ring. Dating according to Dayagi-Mendels.

Megiddo	Copper alloy	1	Stratum V	10th-9th c.	Loud 1948: pl. 170: 27	Ring missing. Dating according to Mazar 2008.
Megiddo	Copper alloy	1	Stratum VA	10th-9th c.	Loud 1948: pl. 170: 28	Ring missing. Dating according to Mazar 2008.
Tell Jemmeh	Copper alloy	1	N of Trench 188	11th c.	Petrie 1928: 14, pl. 24: 60	Ring missing. Excavator's dating.
Tel Beth-Shean	Hematite	1	Level V	11th c.	Unpublished	UM reg. no.31-50-326
Tel Beth-Shean	Copper alloy	1	Level V	11th c.	Unpublished	UM reg. no. 29-108-101
Sahem	Hematite and Copper alloy	1	Tomb	13th-12th c.	Fischer 1997: fig. 25: 8	---
Tell el-ʿAjjul	Hematite	1	CM865	15th-13th? c.	Petrie 1952: pl. 23: 26	10.17 gr. Ring missing.
Tell el-ʿAjjul	Schist?	1	Unclear	15th-13th? c.	Petrie 1952: pl. 23: 27	11.40 gr. Ring missing. Excavator's dating.
Megiddo	Hematite	1	Stratum VIII	15th-14th c.	Loud 1948: pl. 168: 11	78.2 gr. Ring missing. Excavator's dating.
Tell en-Naṣbeh	Unclear	1	Unclear	Unclear	Eran 1982: no. 8	---
Megiddo	Serpentine and Iron	1	Surface	---	Lamon and Shipton 1939: pl. 104: 54	44.2 gr. Iron ring.
Gezer	Hematite and Copper alloy	1	Cave VI 13	Unclear	Macalister 1912c: pl. 226: 31	Copper alloy ring.
Gezer	Copper alloy	1	Cave VIII 1	Unclear	Macalister 1912b: 452	With copper alloy weight and ring.

7.4.3. Pendants Type III – Bone/Ivory and Shell

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
III.1	Club	Late Iron Age I – Iron Age II	Common local type	Fig. 24: 1-15
III.1a	Club – Short with Square Section	Iron Age II	Rare	Fig. 24: 16
III.1b	Hourglass-Shaped	Iron Age I-II	Rare	Fig. 24: 17-18
III.2	Plaque	Iron Age II	Common local type	Fig. 25: 1-11
III.3	Tooth/Tusk	Prehistoric to Present	Rare	Fig. 26: 1
III.4	Cowrie Shell with Removed Dorsum	Epipaleolithic to Present.	Very common	Fig. 26: 2-3
III.5	Mallet-Shaped	Early Iron Age II	Local type	Fig. 26: 4-10
III.6	Modified Cassid Lip	Paleolithic-Roman	Resembling crescent?	Fig. 26: 11
III.7	Bivalve Holed at Umbo	Neolithic onwards.	Very common	Fig. 26: 12
III.8	Flat Drop	Epipaleolithic onwards	Common	Fig. 26: 13-14
III.9	Schematic Naos Shrine	Iron Age II?	Egyptian type. Rare, usually in siliceous material.	---
III.10	Anthropomorphic	Iron Age IIB	Egyptian type. Usually in siliceous material.	---
III.11	'U'-Shaped	Iron Age I-II?	Rare	Fig. 26: 15-16
III.12	Flat Rectangular with Two Suspension Holes	Chalcolithic	Common	---
III.13	Small 'Jug'-Shaped	EB I	Rare	---
III.14	Oval with Two Opposing Holes	Intermediate to Late Bronze	Common	---

Pendants Type III.1 – Club (Fig. 24: 1-15)

Bone/ivory pendants in the form of an elongated club or stick, usually between 4-9 cms in length, with a rounded or oval cross-section, perforated at one end. The other, lower end is often slightly wider.[242] Both the top and the bottom ends of the pendant are usually rounded.

This type of pendant, usually made of bone or ivory, is typical of the Iron Age II in the southern Levant, with a distribution from Byblos in the north to Tell el-Farʽah (S), Tell Jemmeh and ʻAroer in the south (see Platt 1972: 158-206; 1978), though most examples appear within the region of Iron Age Israel and Judah. Type III.1 Club pendants are often found alongside of Type III.2 Plaque and Type III.5 Mallet-Shaped Pendants (see below).

The elongated form of this pendant type is a natural outcome of bone as a raw material, which can easily lend itself to elongated shapes. Though some Type III.1 Club Pendants are plain, most are decorated with incised bands or transverse rings below the eyelet and/or near the lower end in addition to cross-hatchings or ʻlattice work' incisions in the middle portion. Many decorated examples feature a succession of ring-and-dot incisions, usually arranged in columns along the sides. At Gezer, Macalister believed that the number of ring-and-dots on these pendants, ranging from 6 to 64 on each one, was of some significance (Macalister 1912b: 452-453), but no pattern is evident and their function appears to have been primarily decorative. The ring and dot motif was widely used in decoration of bone/ivory and small stone objects already during the Middle Bronze Age and may represent a schematic depiction of an ʻeye' (Platt 1978).

Speculations concerning a chronological development of the various decorative schemes (Macalister 1912: 452; Tufnell 1953: 382-383) cannot be substantiated (see Platt 1972: 158-206; 1978). All three decorative modes, along with undecorated examples, appear to have been typical of the 10th-7th/6th centuries. At Samaria, Kenyon noted that this pendant is found during the 10th-9th centuries (Crowfoot, Crowfoot and Kenyon 1957: 462). At Tell Beit Mirsim, Albright dated them to the 9th-7th centuries (Albright 1943: 80) though a more recent dating for Tel Beit Mirsim Stratum A, from where numerous examples have been recovered, posits an 8th century date (Zimhoni 1997). Examples from 12th-10th century contexts such as from Tell ʽEitun, Tel Lachish and Tel Masos may push the range of this pendant type further back into the Iron Age I. However, the examples from Tel ʽEitun are different from the classical form of this pendant, the examples from Levels VI-V at Lachish could have also derived from an 11th-10th century context, and the examples from Tel Masos can also be associated to the 11th century at the earliest. The earliest securely dated examples of this type are associated to the 11th century and judging from the fact that the vast majority of these pendants date to the Iron Age II, it may be safe to assume that the earliest appearance of this type is to be found in the 11th century and not earlier. A few examples found in Persian or even Early Roman strata, such at Megiddo Stratum I and the City of David Stratum VII, all originate from multi-strata sites that also have an Iron Age II occupation, to which these pendants were most likely once associated. For this reason, the chronological range of this pendant, as also other kinds of distinctive jewelry objects, is better established from burial deposits in tombs of a more limited chronological range or from single-period occupations than from multi-strata sites.

The distinctive design and decorative modes of this pendant, alongside of its restricted geographical and chronological range in the southern Levant, have lead some to define this type as ʻIsraelite jewelry' (Platt 1972: 158-206; 1978). The geographical distribution matches the area of the ancient kingdoms of Israel and Judah during the Iron Age II period. Though this pendant type has also been found at sites that are not necessarily considered ʻIsraelite' during the Iron Age II such as Tel Miqne-Ekron, Tell Abu Hawam and Byblos (Dunand 1954: 133, 274, figs. 125, 301) most of these sites fall under the hegemony of the Israelite and/or Judahite monarchies during the Iron Age II. Chronologically, this pendant form is found from the late Iron Age I (11th century) until the 7th-6th centuries, or the end of the Iron Age II. However, at this late stage of the Iron Age II, most examples are found in the region of Judah and not the region of the kingdom of Israel. If this type is indeed to be seen as a form of 'Israelite' jewelry, then this suggestion does find support in the chronological/geographical distruibution as well.

Similar pendants in bone and ivory are known from Ephesus in Asia Minor (Hogarth 1908: pl. 35: 6-14), apparently dated to the 8th-7th centuries. These however are slightly different from the present examples as they are fashioned on a lathe, bearing only horizontal decorative bands. Pendants identical to the Ephesus examples, made of ivory and bone and identified as ʻbobkins', are also known from the Greek mainland such as at the sanctuary of Artemis Orthia at Sparta dated to the 6th century (Dawkins 1929: pls. 174: 11; 175: 6, 8) and at Lindos in Rhodes, (Blinkenberg 1931: fig. 10: 217) associated with the ʻEpoque Archaiques', or late Iron Age II. If the origin and manufacture of Type III.1 pendants is indeed local, as appears from the many sites within the southern Levant where this pendant has been found in quantities, then the western examples of the late Iron Age II may possibly be seen as an import arriving via the Phoenicians or the adoption of an idea. The bulk of these pendants still appear to

[242] In discussing the bone pendants from Tell Jawa, Daviau also regards needle-like bone awls as a rare upside down form of club pendants (Daviau 2002: 27). However, the form of club pendants being so distinct, it is difficult to see the bone needle-awls she cites from Gezer (Dever et al. 1974: pl. 39: 1; Dever et al. 1986: pl. 57: 17) as club pendants which are different in form and concept.

have been centered in the region of ancient Israel and Judah during the Iron Age II, suggesting this region as the source for this type.

The significance of these pendants has aroused interest among scholars. In discussing the pendants from Tell Beit Mirsim, Albright (1943: 81) suggested that they were suspended from the ears as earrings. Mackenzie suggested that the numerous pendants from Tel Beth-Shemesh represent the ‘club of Hercules’ which held protective powers conferring strength and power (1912-1913: 62). Petrie identifies similar objects from Tell Jemmeh as toggle pins (1928: 16). Numerous examples from tombs at Lachish, led the excavators to suggest that they were used for ‘rhabdomancy’ in which a group of such rods are thrown on the ground, their position then interpreted by divination, a practice still found in use in Africa (Tufnell 1953: 382-383). While all of these suggestions bear some merit, none of them may be substantiated (Platt 1978: 27). Type III.1 Pendants are never found in matching pairs, making their use as pendants for earrings less likely; they were most probably worn singly or arranged on necklaces along with other beads and pendants. Their use for magical divining purposes, as suggested by the Lachish excavators, is also unlikely as they are usually not found in groups, as would be expected if they were strung together or otherwise kept together to be thrown on the ground as a group.

The ubiquity of these distinctive pendants during the Iron Age II has been long been noted (Macalister 1912b: 452-453, MacKenzie 1912-1913: 62-63; McCown 1947: 272; Tufnell 1953: 382-383). The fact that they were found in tombs as well as in habitational contexts shows that they were also worn in everyday life. Platt suggested that the fact they are not found in pairs or groups in habitational contexts suggests that each was the possession of one individual or family (Platt 1972: 198); possibly indicating the amount of individuals or families within one tomb. She also noted that at sites where quantities of fine gold and silver jewelry were found, such as at Tell el-Farʿah (S), there are relatively few such pendants, the latter being more common at sites in Judah, where the amount of such luxury items is far less. This may reflect a less ostentatious, possibly ‘poorer’ reality of the local Judahite and Israelite population, leading Platt to suggest that that these pendants be seen as ‘poor people’s’ jewelry (Platt 1972: 89; 1978). At Tell Beit Mirsim, where at least ten such pendants have been recovered, Albright (1943: 80-81) noted the general lack of jewelry that he interpreted as evidence of the poverty, or simplicity of life in an Iron Age II provincial town.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
City of David	Bone	1	Stratum 7	2nd-1st c.	Ariel 1990a: 136, fig. 17: BI151	Probably from earlier strata.
Gezer	Bone or Ivory	1	Stratum III	2nd c.	Dever et al. 1974: pl. 41: 11	Probably from earlier strata.
Tell Abu Hawam	Ivory	1	Stratum II	5th-4th c.	Hamilton 1934: 17, pl. 32: 32	Probably from earlier strata. See dating by Artzy 2008.
Megiddo	Bone	1	Stratum I	6th-4th c.	Lamon and Shipton 1939: pl. 97: 3	Probably from earlier strata. Excavator’s dating.
City of David	Bone	1	Stratum 10C?	7th-6th c.	Ariel 1990a: 136, fig. 17: BI148	---
Tell en-Naṣbeh	Bone	2	Room 390	7th-6th c.	McCown 1947: pl. 112: 33	Two more found in Rooms 436 and 438. Excavator’s dating.
Tell en-Naṣbeh	Bone	1	Room 394	7th-6th c.	McCown 1947: pl. 112: 29	Excavator’s dating.
City of David	Bone	2	Stratum 11?	7th c.	Ariel 1990a: 136, fig. 17: BI149, Bl150	---
Megiddo	Bone or Ivory	1	Stratum II	7th c.	Lamon and Shipton 1939: pl. 97: 2	From earlier strata? Excavator’s dating.
Tel Miqne-Ekron	Ivory	1	Stratum IB-C	7th c.	Golani forthcoming A	---
Tel Miqne-Ekron	Bone	1	Stratum IB	7th c.	Golani forthcoming A	---
Tel Miqne-Ekron	Ivory	1	Stratum IB	7th c.	Golani forthcoming A	---
City of David	Bone	1	Stratum 11-12	8th-7th c.	Ariel 1990a: 136, fig. 17: BI146	Partial fragment.
Megiddo	Bone or Ivory	8	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 97: 1, 4-5, 7-9, 12, 14	Excavator’s dating.

Tel Batash	Bone	4	Strata III-II	8th-7th c.	Yahalom-Mack 2006: 262-264, pl. 57: 14, photo 193	Three more recovered from 10th c. fill.
Tell Beit Mirsim	Bone	10	Stratum A	8th c.	Albright 1943: pls. 32: 15-16, 64: 1-4, 8-11	Dating according to Zimhoni 1997.
City of David	Ivory	1	Stratum 12	8th c.	Ariel 1990a: 136, fig. 17: BI147	---
Hazor	Bone	1	Stratum VB	8th c.	Yadin et al. 1958: pl. 105: 33	---
Lachish	Bone	2	Burial cave 1002	8th c.	Tufnell 1953: pl. 57: 30-31	From a single-period tomb. Excavator's dating.
Tel Be'er Sheva	Bone	3	Stratum III	8th c.	Golani forthcoming F	---
Tell Be'er Sheva	Bone	2	Stratum II	8th c.	Golani forthcoming F	---
ʿAro'er	Bone	1	Stratum IV	8th c.	Thareani 2011: 249, fig. 3.130	---
Hazor	Bone	4	Stratum V	8th c.	Bechar 2012: fig. 8.2: 3-4	---
Samaria	Bone	1	Period V	8th c.	Crowfoot, Crowfoot and Kenyon 1957: fig. 115: 7	Excavator's dating.
Tel Beth-Shemesh (new excavations)	Ivory	1	Level 2	8th c.	Golani forthcoming C	---
Tell en-Naṣbeh	Bone	3	Cistern 302	8th c.	McCown 1947: pl. 112: 30	Two more found in Cisterns 306A, 370. Excavator's dating.
Lachish	Bone	3	Tomb 116	9th-7th c.	Tufnell 1953: pl. 54: 76-78	Mixed tomb. Excavator's dating.
Tell es-Saʿidiyeh	Bone	1	Sounding 3 Layer 1	9th-7th c.	Pritchard 1985: fig. 171: 7	Unclear context.
Tell el-Farʿah (N)	Bone	2	Niveau 2 (Stratum VIId)	9th-8th c.	De Vaux 1951: pl. 17,2: 1-2	Dating according to Chambon 1984.
Lachish	Bone or Ivory	1	Level IVa	9th-8th c.	Sass 2004: fig. 28.17: 12, 28.32.10	Excavator's dating.
Samaria	Bone or Ivory	5	'Ahab' courtyard	9th-8th c.	Reisner, Fisher and Lyon 1924: fig. 243	Excavator's dating.
Megiddo	Bone or Ivory	10	Stratum IV	9th-8th c.	Lamon and Shipton 1939: pl. 97: 6, 10-11, 16, 18-19, 21-23, 33	Dating according to Mazar 2008.
Tell Be'er Sheva	Bone	2	Stratum V	9th c.	Golani forthcoming F	---
Hazor	Bone	4	Stratum VI	9th c.	Bechar 2012: fig. 8.2: 5	---
Tell el-Farʿah (S)	Bone	1	Tomb 221	9th c.	Petrie 1930: pl. 41: 292	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Hazor	Bone	1	Stratum IXA	9th c.	Yadin et al. 1961: pl. 179: 29	---
Lachish	Bone	2	Tomb 224	9th c.	Tufnell 1953: pls. 56: 14; 37: 26-27	From disturbed tomb. Excavator's dating.
Lachish	Bone	3	Tomb 107	9th (?) c.	Tufnell 1953: pl. 54: 65-67	Mixed tomb. Excavator's dating.
Lachish	Bone	20	Tomb 120	9th (?) c.	Tufnell 1953: pls. 55: 17-24; 37: 7, 12, 14	Mixed tomb. Excavator's dating.
Tel Kabri	Bone	2	Stratum D 2	9th (?) c.	Oren 2002: fig. 10.18: 14-15; 10.19: 10-11	---

Tell Jemmeh	Bone	7	Levels 186, 190-195	10th-6th c.	Petrie 1928: pl. 33: 2, 7-8, 11-12, 18, 22	Excavator's dating.
Tel Jemmeh	Ivory	2	Room D	10th-8th c.	Golani forthcoming F	---
Tell en-Naṣbeh	Bone	6	Tomb 32	10th-8th c.	McCown 1947: pl. 112: 31-32	Four more found in Tombs 33 and 52. Excavator's dating.
Bethel	Bone	4	Unclear	10th-8th c.	Albright and Kelso 1968: pl. 45: 5, 6, 8, 9	Excavator's dating.
Gezer	Bone or Ivory	18	Fourth Semitic Period	10th-8th c.	Macalister 1912b: 452-453, pl. 226: 41-56, 61, 62	Excavator's dating.
Lachish	Bone	11	Tomb 218	10th-9th c.	Tufnell 1953: pls. 55: 44-47; 37: 19-23	Excavator's dating.
Tyre	Ivory	1	Stratum XII	10th-9th c.	Bikai 1978: pl. 30: 13	---
Megiddo	Bone	7	Stratum VA	10th-9th c.	Loud 1948: pl. 218: 130-133, 135	Dating according to Mazar 2008.
Megiddo	Bone	1	Stratum V	10th-9th c.	Loud 1948: pl. 216: 125, 127-128	Dating according to Mazar 2008.
Megiddo	Bone or Ivory	14	Stratum V	10th-9th c.	Lamon and Shipton 1939: pl. 97: 13, 15, 17, 20, 24-33	Dating according to Mazar 2008.
Pella	Bone	1	Trench XXVIIIB (Strata IX-VIII?)	10th-9th c.	Bourke et al. 2003: fig. 42: 3	Another, undecorated pendant, found in an Iron Age I/IIA context in 1985 season.
Khirbet Qeiyafa	Bone	5	Unclear	10th c.	Kehati 2009: fig. 11.1: 2	Only one published.
Tel Beth-Shemesh	Ivory	23	Tomb 1	10th c.	Mackenzie 1912-1913: pl. 30: 1-23	From a single-period burial. Excavator's dating.
Tel Beth-Shemesh	Bone	1	Stratum II	10th c.	Grant and Wright 1938: pl. 53: 29	Excavator's dating. At least 13 more examples,6 of ivory, 6 of bone and 1 of green stone were found in various, unclear contexts.
Gezer	Bone	1	Tomb 142	10th c.	Macalister 1912a: 334, pl. 103: 15	Excavator's dating.
Tel Be'er Sheva	Bone	1	Stratum VII	10th c.	Herzog 1984: fig. 25: 5, pl. 14: 12; Golani forthcoming F	---
el-Jib (Gibeon)	Bone	1	Tomb 3	11th-10th c.	Pritchard 1963: fig. 73 (at bottom)	UM reg. no. 62-30-191.
Har Yona, Upper Nazareth	Bone	1	Burial cave	11th-10th c.	Alexandre 2003: fig. 3: 5	---
Tel Beth-Shemesh (new excavations)	Bone	1	Level 4	11th-10th c.	Golani forthcoming C	---
Tel el-Farʿah (N)	Ivory	1	Stratum VIIB	11th-10th c.	Chambon 1984: pl. 73: 1-3	Dating by Chambon.
Tel Miqne-Ekron	Ivory	1	Stratum IVA	11th-10th c.	Golani forthcoming A	---
Tel Miqne-Ekron	Ivory	1	Stratum IVA-B	11th-10th c.	Golani forthcoming A	---
Tel Batash	Bone or Ivory	3	Stratum V	11th-10th c.	Yahalom-Mack 2006: 262-263, Photo 129, pl. 57: 14	From mixed locus with Iron Age I and 10th c. ceramics.
Nazareth	Terracotta coated with Bitumen	1	Cave tomb	11th c.	Vitto 2001: fig. 4: 1	From disturbed tomb.

Tel Masos	Bone	2	Stratum II	12^{th}-11^{th} c.	Fritz and Kempinski 1983: pl. 105: 5-6	Dating according to Mazar 2008.
Lachish	Bone	1	Levels V-VI	12^{th}-10^{th} c.	Tufnell 1953: pl. 63: 21	Excavator's dating.
Tell ʽEitun	Bone	2	Tomb C1	12^{th}-11^{th} c.	Edelstein and Aurant 1992: fig. 14: 13, 17	From repository in 'Philis-tine' tomb. Not the classic shape.
Hazor	Bone	1	From trial trench	Unclear	Yadin et al. 1958: pl. 78: 26	---
Tell en-Naṣbeh	Bone	1	Unclear	Unclear	McCown 1947: pl. 112: 34	---
Gezer	Terracotta	1	Tomb 85	Unclear	Macalister 1912a: 334, pl. 89: 12	---
Megiddo	Bone or Ivory	3	Surface	---	Lamon and Shipton 1939: pl. 34, 36	---.
Tell Jawa	Bone	1	Unclear	Iron Age II?	Daviau 2002: 26, fig. 2.1: 1	---
Megiddo	Bone	1	Unclear	Iron Age II?	Watzinger 1929: fig. 48: 16	---
el-Jib (Gi-beon)	Ivory	1	Unclear	Iron Age II	Unpublished	UM reg. no. 62-30-845

Pendants Type III.1a – Short with Square Section (Fig. 24: 16)
An uncommon variant of Type III.1, bearing a square or rectangular cross-section instead of a rounded one.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Bone	3	Tomb 218	10^{th}-9^{th} c.	Tufnell 1953: pl. 67: 128	With incised ring and dot mo-tif on all four facets. Excava-tor's dating.
Tel Beth-Shean	Ivory	1	Level V	11^{th} c.	Unpublished	UM reg. no. 29-104-388
Gezer	Bone	1	Unclear	Unclear	Macalister 1912b: pl. 226: 34	---

Pendants Type III.1b – Hourglass-Shaped (Fig. 24: 17-18)
A further variant of Type III.1 Club Pendants with an 'hourglass' shape, wide at top and bottom with a tapering constricted 'waist' and flat or rounded at bottom.

An uncommon form, this type is usually not decorated. The example from Tyre shows that like the regular bone pendants, the geographical distribution of the Type III.1b variant extended into the region of Lebanon as well.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Beth-Shean	Bone	1	Level V Upper	9^{th}-8^{th} c.	James 1966: fig. 113: 17	Dating according to James 1966.
Gezer	Bone or Ivory	1	Fourth Semit-ic Period (Iron Age II?)	10^{th}-8^{th} c.	Macalister 1912b: pl. 226: 57	Of 'bowling pin' form. Excavator's dating.
Tyre	Ivory	1	Stratum XII	10^{th}-9^{th} c.	Bikai 1978: pl. 30: 15	With incised line decora-tion.
Tel Ashdod	Ivory	1	Stratum XII	12^{th} c.	Golani and Ben-Shlomo 2005: fig. 4.1: 9	---
Megiddo	Bone	1	Surface	---	Lamon and Shipton 1939: pl. 97: 35	---

Pendants Type III.2 – Plaque (Fig. 25: 1-11)
Plaque pendants made of bone, appearing in three primary shapes: rectangular, oval/circular and drop-shaped. These pendants are usually decorated with incised circles or ring-and-dot motifs.

The most common shape of these pendants is rectangular, hung from a suspension hole at one of the short ends. A semi-circular, mushroom-shaped or triangular-shaped inverted suspension tab is also commonly found. A few examples, such as those from ʿAro'er and Tell el-Farʿah (S), depict proto-aeolic capitals at the top. Alongside the rectangular pendants, elongated oval shapes are less common, usually with a mushroom-shaped suspension tab. Least common are the circular or drop-shaped plaque pendants, usually with a simple tab for suspension.

Type III.2 Plaque Pendants are usually found along with Type III.1 Club Pendants and Type III.5 Mallet–Shaped Pendants (see below) within the same geographical area during the entire Iron Age II.[243] The distribution of such pendants is limited primarily to the southern Levant, while a singular example, also dated to the Iron Age II, is found at Hama in Syria (Riis 1948: 178, fig. 228). Like Type III.1 Club Pendants, Type III.2 Plaque Pendants appear to be characteristic of the Iron Age II in the southern Levant.

These objects have been regarded as calendars designating 30 days (Petrie 1930: 13; Platt 1978: 25) because some examples were found with three rows of ten uniform ring and dot markings or holes on one of their wide flat sides. However, while the few examples with 30 or even 31 markings may lend themselves to such interpretation (cf. Fox 2011), many other examples bearing 6, 10, 12, 15, 17 or 20 markings on one side are not so easily explained, suggesting that, as in the Type III.1 Club Pendants, such markings may have had other, as yet unclear meanings or were only decorative.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Moza	Bone	1	Stratum IV	7th-6th c.	Greenhut 2009a: fig. 9.1: 2	Partial. Drop-shaped plaque with suspension tab and incised circles and dots around perimeter.
Lachish	Bone	3	Tomb 106	7th-6th c.	Tufnell 1953: pl. 54: 36-37, 39	Partial. Rectangular plaque with no suspension tab. Mixed tomb. Excavator's dating.
Tel Miqne-Ekron	Bone	1	Stratum IB	7th c.	Golani forthcoming A	Partial. Rectangular(?) plaque with semicircular tab.
Tel ʿAro'er	Bone	1	Stratum II(?)	7th c.	Biran and Cohen 1981: fig. 24: D; Biran 1983: 37	Rectangular plaque with depiction of proto-aeolic capital on top. Four vertical registers with 3x10, 1x12 ring and dot decoration.
Megiddo	Bone	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 77: 6	Rectangular plaque with triangular suspension tab. Undecorated. Excavator's dating.
City of David	Bone	1	Unstratified	Prob. 8th-7th c.	Ariel 1990a: 137, fig. 17: BI 153	Rectangular plaque with no suspension tab. Six ring and dots on one side, only one on the other side. See also from Nimrud; Barnett 1957: pl 123: T27.
Lachish	Bone	1	Levels III-II?	8th-7th c.	Tufnell 1953: pls. 41: 10, 63: 15	Drop-shaped plaque with 21 incised circles around circumference. From within room. Excavator's dating.
City of David	Bone	1	Stratum 12	8th c.	Ariel 1990a: 136-137, fig. 17: BI 152	Partial, possibly with thirty holes.
Kadesh Barnea	Bone	1	Stratum 3a-b	8th c.	Gera 2007: fig. 13.5: 26; pl. 13.5: 26	Drop shaped with no decoration.
Lachish	Bone	1	Burial cave 1002	8th c.	Tufnell 1953: pl. 57: 28	Partial. Rectangular plaque with semicircular tab. Excavator's dating.
Tel Be'er Sheva	Bone	1	Stratum II	8th c.	Aharoni 1973: pl. 23: 5; Golani forthcoming F	Rectangular plaque with triangular suspension tab. Five ring and dots on one side
Lachish	Bone	1	Burial cave 1002	8th c.	Tufnell 1953: pls. 37: 16; 57: 29	Oval plaque with mushroom-shaped tab. Ten ring and dots on one side arranged in two vertical rows. Excavator's dating.

[243] These objects are also usually found at the same sites with bone 'fans' or 'cosmetic pallettes' made of cow or sheep scapula and decorated with ring and dots, also dating to the Iron Age II. For examples, see Albright 1943: 83, pl. 29: 15 (Tell Beit Mirsim), Ariel 1990a: fig. 16 (City of David), Tufnell 1953: pl. 63: 12 (Lachish) and Mazar and Panitz-Cohen 2001: 263-264 (Tel Batash).

Lachish	Bone	2	Tomb 120	9th c.	Tufnell 1953: pls. 37: 15, 17; 55: 27-28	One complete, one partial. Rectangular plaque with semicircular tab. Thirty small circles arranged in three vertical registers. Mixed tomb. Excavator's dating.
Lachish	Bone	1	Tomb 107	9th c.	Tufnell 1953: pl. 54: 64	Rectangular plaque with mushroom-shaped tab. Seventeen ring and dots on one side arranged in three vertical rows. Excavator's dating.
Tell el-Farʿah (S)	Bone	1	Tomb 201	10th-8th c.	Petrie 1930: pl. 40: 481; pl. 36	Rectangular plaque with tab depicting proto-aeolic capital. Thirty ring and dots in 3 vertical registers separated by incised chevrons. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell Jemmeh	Bone	1	Level 192	10th-8th c.	Petrie 1928: pl. 33: 42	Rectangular plaque with triangular tab. With six ring and dots on one side. Excavator's dating.
Gezer	Bone or Ivory	3	Fourth Semitic Period	10th-8th c.	Macalister 1912c: pl. 226: 58, 59	Rectangular plaque with mushroom-shaped tab. One pendant has 20 ring and 7 more on thin side. The other has 31 marks on one side. A third example is partial with 37 marks. Excavator's dating.
Lachish	Bone	1	Tomb 218	10th-9th c.	Tufnell 1953: pls. 37: 18; 55: 51	Oval plaque with mushroom-shaped tab. Twelve ring and dots on one side arranged in three vertical rows. Excavator's dating.
Megiddo	Bone	1	Stratum VA	10th-9th c.	Loud 1948: pl, 218: 135	Rectangular plaque with mushroom-shaped tab. Fifteen ring-and-dots in three vertical rows. Dating according to Mazar 2008.
Lachish	Bone	1	Tomb 521	10th c.	Tufnell 1953: pls. 37: 3; 56: 23	Rectangular plaque with semicircular tab. Thirty small circles arranged in three vertical registers. From a single-period burial. Excavator's dating.
Tell el-Farʿah (S)	Bone	1	From tell	Unclear	Starkey and Harding 1932: pl. 74: 116	Partial. Circular plaque with suspension tab and 18- 19 ring and dots around perimeter.

Pendants Type III.3 – Tooth/Tusk (Fig. 26: 1)

Animal teeth or tusks used as pendants, usually found with a perforation hole at the base end.

The use of animal teeth or tusks as pendants and amulets is well-known from prehistoric to modern times. In Egyptian religious symbolism, an amulet of a wild boar tusk was worn against the evil eye and miniaturized depictions of tusks in stone, faience and glass are a common Egyptian amulet form (Petrie 1914: 13). In the early 20th century CE, boar tusks were used as a prophylactic to avert the evil eye from horses (Macalister 1912b: 29 and see above discussion of Type I.4 Metal Pendants). The canine tooth of a bear may also be used as a pendant, as in an example from Tel Miqne-Ekron, dated to the 7th century (Golani 1996a: 64, fig. 14: 5).

Pendants Type III.4 – Cowrie Shell with Removed Dorsum (Fig. 26: 2-3)

Pendants made of shells belonging to the genus *Cypraea*, commonly termed 'cowries', in which the rounded dorsum, or back of the shell, is often found removed, having been either ground down or cut off to facilitate their stringing.[244]

[244] The taxonomic designation 'Cypraea' originated from Cyprus, where the cult of Aphrodite was believed to have begun (Stol 2000: 52).

In the Levant, the use of cowries as amulets is a very ancient tradition, dating back to the Epipaleolithic, when cowries from the Red Sea and the Mediterranean have been found at sites in Israel and Jordan (Reese 1986: 328 – 330; 1991: 188). Cowrie shells are very common in the Iron Age (see Bar-Yosef Mayer 2007: table 18.3). In the Iron Age II levels at Kadesh Barnea, cowrie shells comprised one third (128) of all the shells recovered during excavation. Of these, a quarter were found with their dorsum removed (Bar-Yosef Mayer 2007: 280-281). Ornaments manufactured of Red Sea cowries reached southern Europe as early as the 1st century CE, becoming more common by the 7th century CE, when they are found as far north as Scandinavia (Reese 1991: 188-189). Their extensive distribution is evidence of their immense popularity among many ancient and unrelated cultures. In Egypt of the Middle Kingdom, Red Sea cowries have been found strung as beads on a girdle around the hips of female figurines (Desroches-Noblecourt 1953: pl. I; Breasted 1948: pl. 89: fig. b; Hodžaš 1971: fig. 13). The prominent display of cowries on the pelvic area suggests that they did not function as ordinary decorative beads yet probably had a function beyond ornamentation. Cowries have been commonly interpreted as amulets intended to protect against sterility, to increase fertility and to ward off the evil eye from pregnant women (Clark 1986: 23ff.; Andrews 1990: 65; 1994: 42). The ancient Sumerians and Babylonians saw shells (not necessarily but quite possibly cowries) as associated with pregnancy and the Sumerian ideogram for 'pregnancy' is the same for 'shell' (Stol 2000: 51-52). Neo-Assyrian texts specifically mention cowrie shells in records of precious items (e.g., Fales and Postgate 1992: 129), highlighting the cultic and religious importance of cowries as well as their value as economic goods expressing status and wealth.

In Egypt, Nilotic women today wear aprons sewn with cowrie shells to protect the pelvic organs from the aborting and sterilizing effect of a malevolent gaze (Aldred 1971: 15-16), showing that these shells are used as a prophylactic against the evil eye. The elongated opening of the shell on the ventral side was probably associated by many ancient cultures with female genitalia. In addition, it has been suggested that the way in which the animal leaves the shell may recall the act of childbirth. Cowries may thus be connected to the act of giving life, symbolizing rebirth and the afterlife, possibly intended to ensure existence or resurrection after death (Reese 1991: 189). The resemblance of the ventral side to a half-open human eye has been interpreted as a prophylactic against the evil eye (Reese 1991: 189) and the link between cowries and human eyes is evident in the numerous skulls with plastered faces having cowries inserted into the eye sockets, such as from Neolithic Jericho (Kenyon 1952). A large, hollow, jar-shaped anthropomorphic statue of a bearded man from an Edomite shrine at Horvat Qitmit shows a string of what appear to represent cowrie shells that are modeled in clay (Beck 1995: 45, 115-116 [no. 23], figs. 3.16-3.17, 3.19-3.20). Beck interprets these shells as delineating the fringes of the man's garment, noting that leather cloaks and shawls with cowrie shell decoration are still worn today in Africa and Asia (Beck 1995: 115-116), though the shells may have also represented a long necklace. Regardless of how they were worn or otherwise affixed to the garments, the association of the cowries to the male worshiper at Qitmit only serves to highlight the cultic/religious and possibly amuletic value of these items.

The form of the shell, and not the shell itself, might have held significance for the bearer. Thus, while the shell may be acquired by trade, the form has also been found made of other, cheaper materials, such as faience (see below Type IV.1 Siliceous Pendants). However, the symbolic potency of the form being so *highly* valued, it has also been found made of precious metal (Andrews 1994: 42; D'Amicone 1984-1985).

Cowries have been found as burial gifts in the graves of children, such as at Tell es-Saʿidiyeh Tomb 120 (Pritchard 1980: pl. 25: 3). Cowries have also been found arranged around the skull of female burials, as at Tell el-Farʿah (S) Tomb 201 (Petrie 1930: 36: center left) indicating that they were also worn as a headband, much as some Bedouin women wear them until today.[245] Cowrie shells have also been used as a form of money (Hogendorn and Johnson 1986: 12-19). In addition to their association to females and children as expressed in burials and Egyptian figurines, Cowries are occasionally found adorning animals as well. The Egyptians were especially fond of their domestic cats that were also adorned with cowries (Mogensen 1930: pl. 53; Seipel 1989: 318: no. 486), suggesting that cowries served a protective function for animals. Because of their recognized symbolic and cultic value, cowrie shells may have also functioned as status symbols. In Africa, cowries were commonly used as a media of exchange so their use is also employed to denote royal authority and power (Safer and Gill 1982: 94).

Archaeologically, cowries are usually found as singular items as well as in groups throughout the Iron Age II as well as in earlier and later periods. Where taxonomic identification of these shells has been carried out, the majority appears to have originated from the Red Sea (e.g. *Cypraea annulus, Cypraea turdus, Cypraea erosa nebrites*) while only a few (e.g. *Cypraea luria*) are of Mediterranean origin. Red Sea cowries were probably preferred due to their larger size and are evidence of trade connections with this region.

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245 To this day, many people of both sexes may be seen wearing cowries with cut off backs as singular pendants or as parts of larger creations. However, their use today, at least in modern western culture, is generally devoid of any meaning or significance other than their aesthetic value.

Pendants Type III.5 – Mallet-Shaped (Fig. 26: 4-10)

'Mallet' or 'gavel'-shaped pendants made of bone/ivory and manufactured in two parts: a cylindrical 'head' and a thin shaft that was inserted at one end into the head and pierced at the other for suspension. The 'head' of the mallet is often decorated with incised ring-and-dot motifs.

These pendants may be made of bone or ivory and have a chronological range from the very end of the Iron Age I/beginning of the Iron Age II and into the early Iron Age II, where they are usually found alongside Type III.1 Club Pendants and Type III.2 Plaque Pendants (see above), though Type III.5 Mallet-Shaped Pendants apparently do not continue into the latter half of the Iron Age II. As in pendant types III.1 and III.2, the distinctive shape, its localized distribution and restricted chronological association posits this form as characteristic of the late Iron Age I and early Iron Age II in ancient Israel. As in the Type III.1 and Type III.1 pendants discussed above, Ben-Basat has also noted that the strong similarity among Type III.5 pendants emphasizes the importance of their specific morphological shape, suggesting that this form was determined by social or cultural considerations rather than technological ones (Ben-Basat 2011: 150).

The specific form was probably a small representation of a larger full-sized mallet or hammer, which may have been worn to identify the profession or affiliation of the wearer. As this type of pendant is not found anywhere else outside the Iron Age II, its significance was probably restricted to this region during this period only.[246]

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Megiddo	Bone	1	Stratum IV	9th-8th c.	Loud 1948: pl. 197: 17	Partial, head only. Dating according to Mazar 2008.
Lachish	Bone?	5	Tomb 120	9th c.	Tufnell 1953: pls. 37: 8, 10, 11, 13; 55: 26, 25	Mixed tomb. Excavator's dating.
Tell Jemmeh	Bone	1	Level 193	10th-8th c.	Petrie 1928: pl. 32: 16	Excavator's dating.
Lachish	Bone?	2	Tomb 218	10th-9th c.	Tufnell 1953: pls. 37: 24-25; 55: 48-50	Excavator's dating.
Pella	Bone or Ivory	1	Unclear	10th-9th c.	S. Bourke, pers. comm.	Unpublished
Megiddo	Bone	1	Stratum V	10th-9th c.	Lamon and Shipton 1939: pl. 77: 16	Head of mallet shows schematicized depiction of bovine head. Dating according to Mazar 2008.
Megiddo	Bone	1	Stratum VA	10th-9th c.	Loud 1948: pl. 197: 16	Partial, head only. Dating according to Mazar 2008.
Megiddo	Ivory	1	Stratum V	10th-9th c.	Lamon and Shipton 1939: pl. 77: 16	Identified as a bovine(?) head with horns broken off. Dating according to Mazar 2008.
Tel Ashdod	Ivory	1	Stratum X	10th c.	Golani and Ben-Shlomo 2005: fig. 4.1: 11	Partial, head only.
Tel Beth-Shemesh	Ivory	5	Tomb 1	10th c.	Mackenzie 1912-1913: pl. 30a: 13-15	Excavator's dating. At least two more unpublished examples found in rooms associated to Stratum II on the tell. UM reg. nos. 61-14-880, 61-14-882
Tel Miqne-Ekron	Ivory	1	Strata IVB-VC	11th-10th c.	Golani forthcoming A	---
Tel Dor	Ivory	1	Phase G/8	11th c.	Ben-Basat 2011: 73, 150	---
Megiddo	Bone	1	Strata VII-V	12th-9th c.	Loud 1948: pl. 197: 15	Dating according to Mazar 2008.
Megiddo	Bone	1	Stratum VIIA	12th c.	Loud 1948: pl. 197: 14	Partial, head only. Probably originates from later strata. Dating according to Mazar 2008.

[246] However, similarly shaped pendants made in one piece of cast copper alloy are known from the Nuraghic culture in Sardinia, where they are dated to the 12th-10th c. (Babbi 2002: 440-442) and the same form is also found in Etruscan Italy and Late Geometric burial and domestic contexts in Greece during the 9th-7th c. (idem: fig. 7) where the distinctive form is linked to the possible profession of its wearer. While the initial appearance of this distinctive form in the southern Levant and the central Mediterranean occurs at the same time, it is as yet unclear whether this is coincidental or not.

Pendants Type III.6 – Modified Cassid Lip (Fig. 26: 11)

Broken-off and polished lips of *Phalium* shells. The ends of these objects are often found pierced but many examples are not.

Commonly termed 'Helmet' or 'Bonnet' shells (*Phalium granulatum undulatum* of the Cassidae family –hence the term 'cassid lips'), all originating from the Mediterranean Sea, the thickened water-worn outer lips of these shells may be found on the beach or may be broken off or cut from the shell itself. The lip is curving with one side bearing a row of natural serrations, while the other is smooth. These lips, as well as whole and perforated Cassid shells, have often been found artificially holed at one end. They appear to have been used as ornaments and have been found in graves, sanctuaries and various occupational deposits throughout the Mediterranean basin and especially the Near East at coastal and inland sites from the Upper Paleolithic to the Roman period (see Reese 1989).

The function of these objects is unclear. The pierced examples may have been hung from the two ends by a string and may have been selected for their symbolic value in depicting a crescent (Sass 1993: 268), a well-known symbol popular in silver and gold throughout the Bronze and Iron Ages (see above Type I.4 Metal Pendant). The unperforated examples may have also been sewn into garments with the help of the natural serrations upon the lip (Sass 1993: 268).

Pendants Type III.7 – Bivalve Holed at Umbo (Fig. 26: 12)

Cerastoderma glaucum or *Glycymeris sp.*[247] (bittersweet clam) originate in the Mediterranean and are commonly found along its shores. These are bivalve shells, composed of two shells that usually separate from one another after the death of the organism inside. The *umbo*, a natural protuberance in the center of the hinge of the two shells, is often found naturally holed[248], enabling the shell's use as a pendant without any modification.

At Gezer, Macalister (1912b: 94) observed that "large piles of… bivalve shells from the seashore…pierced at the hinge...were found in the excavations from time to time. Piles of twenty or thirty were not infrequent in all the pre-Hellenic strata". At Tell Jawa in Jordan, Daviau remarks that these are the most common types of shell used as a pendant (2002: 27-29). Though they are commonly found in archaeological excavations, often in piles that may have been the remains of necklaces, such shells are often overlooked and given scant attention in archaeological reports.

The use of such shells in the Levant is known as early as the Neolithic period, for example among grave offerings at Byblos (Dunand 1973: pl. 165) and even earlier in the Middle Paleolithic (Bar-Yosef Mayer 2005b: 46). Recently, numerous such shells, closely packed together and placed one within the other, probably indicating that they were strung as a necklace, were found in an Early Bronze Age deposit at Lod (Golani forthcoming D). Concentrations of such shells, all presumably strung together, are also known from the Early Bronze period at Qiryat Ata (Reese 2003: 253). The use of these shells is not restricted to coastal sites as they are also commonly found at sites far removed from the Mediterranean such as Jericho (Biggs 1963: 125; fig. 1b), Tell Jawa in Jordan (Reese 2002) and Tell el-Mazar in Jordan during the Late Iron Age (Yassine 1984: fig. 59).

The ubiquity of these shells along the Mediterranean shores and the ease which they may be strung has made them a common item for simple ornamentation from prehistoric to modern times. In addition, these shells are a handy tool for pottery burnishing (Cartwright 2004) or scraping. Their agglomeration in piles may suggest a foundation deposit, possibly intended to bring good luck (Bar-Yosef Mayer 2005b: 46), but this appears less likely when they are found concentrated upon a living surface, promoting the suggestion that they were used as raw material in construction and pavement of floors or ground up as temper for ceramic production (Bar-Yosef Mayer 2005b: 47). At Tell es-Saʿidiyeh, the finding of a large number of bivalves in piles upon the floor of a storeroom from the Early Bronze Age prompted the suggestion that they may have been used as some kind of tallies or counters or possibly even as units of currency (Tubb and Dorrel 1994: 63). However, their finding as singular items on habitational surfaces and especially in burial deposits is also a strong indication of their use for ornamentation.

The significance of these shells in ancient times is unclear. While they may have served number of functions, their use as grave goods does suggest that they may have borne cultic/religious meaning. As in the Type III.4 Shell Pendants discussed above, Type III.7 Shell Pendants were also imitated in precious metal and are seen as amuletic jewelry as they are occasionally inscribed (Andrews 1990: fig. 157).

Pendants Type III.8 – Flat Drop (Fig. 26: 13-14)

Pendants made of bone or shell, carved into drop or rectangular form.

This type has a chronological range from prehistoric to modern times and is similar to Type II.1a Stone Pendants, but less common.

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247 Most of these shells have usually been named *Glycymeris violacescens* yet are today more accurately identified as *Glycymeris insubrica* (Bar-Yosef Mayer 2005b).

248 The term 'holed' is used here instead of 'perforated' as the opening used for stringing at the umbo is commonly natural or may have also been man-made.

Pendants Type III.11 – 'U'-Shaped (Fig. 26: 15-16)
Flat semicircular pendants, usually made of bone, with stringing holes found near the center of the straight edge.

This type is uncommon, each example slightly different. They appear to be found throughout the Iron Age and may be a somewhat miniaturized depiction of the broad Egyptian '*Shebyu'* collars. Similar pendants made in ivory and gold from Sparta and Delos in Greece, dated to the 7th century (Deonna 1938: 303, fig. 371, pl. 88: 766) may reflect cultural contacts between Greece and the southern Levant during the Iron Age II. However, semicircular pendants are a generalized form that may have been adopted in different places at different times.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
City of David	Ivory	1	Stratum 11	7th c.	Ariel 1990a: 137 fig. 17: BI 154	With lightly incised herringbone decoration on both sides.
Tell el-Far'ah (S)	Bone	1	Tomb 201	10th-8th c.	Petrie 1930: pl. 36: center left; pl. 40: 488	Decorated with holes around circumference. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Gezer	Ivory	1	Unclear	12th c.?	Macalister 1912b: 331, fig. 456	Pectoral with hieroglyphs of Merneptah. Excavator's dating.

7.4.4. Pendants Type IV – Siliceous, Non-Egyptian Forms

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
IV.1	Imitation Cowrie	Iron Age II	Uncommon	Fig. 27: 1-2
IV.2	Grotesque Head	Iron Age II	Uncommon	Fig. 27: 3-5
IV.3	Axe-Shaped	MB II – LB	Rare in siliceous materials. See above, Type II.2 Stone Pendants.	---
IV.4	Star or Rosette	LB – Iron Age I	Rare	---
IV.5	Stratified Rounded 'Eye' (also as centerpiece)	LB – Iron Age I	Rare	---
IV.6	Elongated Oval or Conical	LB – Iron Age II	Rare	Fig. 27: 6
IV.7	'Boat'-shaped centerpiece	Iron Age I	Rare	---

Pendants Type IV.1 – Imitation Cowrie (Fig. 27: 1-2)
Mold-made or hand-shaped faience pendants formed to imitate cowrie shells with ground down or cut dorsum (see above Type III.4 Shell Pendant).

The high regard in which cowrie shells were held is seen in imitations of the form in precious metal, stone and siliceous materials such as faience and glass. In Egypt, cowrie shells were imitated as early as the 6th dynasty in terracotta, carnelian, quartz, glass or glass paste (Andrews 1994: 42; Kovacs 2008: 18, 162-172). However, during the Egyptian Middle Kingdom, outstanding imitations of cowries were made of gold, silver and electrum sheet metal (Aldred 1971: pls. 19, 31; Andrews 1994: 42, figs. 49: g, 69: a; D'Amicone 1984-1985; Hayes 1990: 239, fig. 153). Egyptian goldsmiths also occasionally put bits of metal into the hollow portions of the imitation that caused a jingling, rattling sound when their wearer moved. These imitations were made of precious stones and metals of far greater value than the shells themselves. During the Iron Age II, the Phoenicians also imitated cowries such as in examples made of faience and Egyptian Blue, found in the Phoenician necropolis of Akhziv. Golden cowrie imitations were also made by the Phoenicians during the 7th-6th centuries such as at Sardis in western Asia Minor (Densmore Curtis 1925: pl. 3: 3, 12, 5: 33).

Beads in the general shape of cowries, usually termed 'cowroids' in the literature, were also a favorite of the Egyptians from the Middle Kingdom onwards and use of such beads is also found in the southern Levant at the same time (Brandl 1984). These beads functioned as seals and usually bore hieroglyphs or various designs on their flat underside. Such beads may have been fashioned in this form to generally resemble the cowrie shell and were usually made of semi-precious stones or siliceous materials such as faience.

Amongst the various materials used in the manufacture of ornaments in ancient Egypt and the Near East, shell and bone were the least prestigious materials. They were common, easy to obtain and held little or no symbolic meaning in themselves (see above section 4.1.1., 4.1.2.). For these reasons, during the Iron Age II of the southern Levant, beads made of shell and bone are also less common than beads made of other materials.

The reason for imitating the cowrie form in another material is that the *form* of the cowrie, and not the shell *itself*, held significance. The symbolic potency of the form was apparently highly valued, so that it was reproduced in other materials and thus *emulated*. Thus, while the shell may be acquired by trade, the form, and hence also the powers that it bestows, may also be acquired by an imitation. If the imitation is made of materials that also possess symbolic attributes in themselves, then the significance of the form is enhanced.

In this regard it should also be noted that in ancient Egypt, cowrie imitations have so far been found only in burial contexts. This suggests that the importance of the cowrie imitations was to give added significance to the deceased in the afterlife, conferring the much sought-after strength of rejuvenation, rebirth and protection from the evil eye in the netherworld, a significance that was highlighted and enhanced by the use of a symbolic material other than shell. In the southern Levant, most cowrie imitations also derive from burials, yet a few were also found in habitational contexts as well (Sass 2004: fig. 28.17: 10, 28.32: 9; Tufnell 1953: pl. 36: 53). The latter, however, are chance finds of unclear significance.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Faience	1	Tomb ZR XXIX	9th-7th c.	Dayagi-Mendels 2002: fig. 4.21: 57	Dating according to Dayagi-Mendels.
Lachish	Faience	2	From tell – K.15: 1031; G.14: 1008	9th-7th c.	Tufnell 1953: pl. 36: 53	Excavator's dating.
Akhziv cemetery	Egyptian Blue	1	Tomb no. 1, Phase 3	9th-7th c.	Cowie 2004: 247	---
Lachish	Faience	1	Level IVB	9th-8th c.	Sass 2004: fig. 28.17: 10, 28.32: 9	---

Pendants Type IV.2 – Grotesque or Demon Head (Fig. 27: 3-5)

Amulets depicting grotesque heads, generally square in shape with an undecorated back surface. The head is characterized by a very broad and flat nose, small almond-shaped eyes and two prominent animal ears. In addition to these features is a very wide closed mouth with pronounced lips that are stretched back parallel to a square jaw line. The specimen from Akhziv bears somewhat more rounded features and a smaller mouth. The general impression is of a frightening, demon-like face that bears lion-like or dog-like features. All extant examples are found in Iron Age II contexts.

The object from Tel Be'er Sheva is somewhat different, with a small circular mouth, a beard and a cap. This latter item should be associated with a broad group of 'grotesque' heads, all formed in glass of various colors and commonly found during the Persian and Hellenistic periods at sites associated with the Phoenicians throughout the Levant and the Mediterranean (Joukowsky 1985; Uberti 1988; Herrmann 1994: 806-812, Cat. nos. 1332-1348). As both these periods are represented at Tel Be'er Sheva, this item is more likely to be seen as intrusive to the stratum in which it was found.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Ashqelon	Siliceous material	1	Unclear	8th-7th c.	Herrmann 2002: 97, Cat. no. 82	Head of dog(?) or jackal(?).
Tel Be'er Sheva	Glass	1	Stratum II	8th c.	Aharoni 1973: pl. 24: 4	Partial. Suspension hoop at top. Probably intrusive from Persian or Hellenistic strata.
Akhziv cemetery	Bone (polished)	2	Tomb 1, Phase 3	9th-7th c.	Cowie 2004: 236, 238	Head of dog(?) or jackal(?).
Akhziv (er-Ras cemetery)	Faience	1	Tomb XXXVI	9th-8th c.	Dayagi-Mendels 2002: fig. 4.27: 115	With more rounded features. Dating according to Dayagi-Mendels.
Tell el-Farʿah (S)	Bone	1	Unclear	12th-8th c.	Petrie 1930: pl. 35: 418	With no depiction of mouth. Excavator's dating.

Pendants Type IV.6 – Elongated Oval or Conical (Fig. 27: 6)

Mold-made siliceous pendants of flattened oval or truncated conical shape, with an attached tab or extension for suspension. Some are pierced at the tapering end, as in the example from Megiddo.

A few examples are found spanning the Late Bronze Age III to the Iron Age II.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv (er-Ras Cemetery)	Faience? Glass?	1	Tomb ZR IX	10th-7th c.	Dayagi-Mendels 2002: fig. 4.7: 103	Oval with small pierced tab. Dating according to Dayagi-Mendels.

Megiddo	Faience	1	Stratum V	10^{th}-9^{th} c.	Lamon and Shipton 1939: pl. 77: 15	Flattened, truncated conical shape. Dating according to Mazar 2008.
Gezer	Faience	1	Strata XIV-XV	13^{th}-12^{th} c.	Dever, Lance and Wright 1970: pl. 36: 6	Oval-shaped with attached suspension loop.

7.4.5. Summary and Discussion – Pendant Types I-IV

In a study of the color of 156 pendants from selected local sites of the 8^{th}–6^{th} centuries in the southern Levant, 63% were of cream color, 14% had reddish hues, 7% gray, while silver, blue, white, black, bronze, brown-orange and clear tones made up between 4-1% (Limmer 2007: Chart 7.3). As to the materials, bone/ivory comprised 56%, carnelian 11%, glass 8%, faience, 3% and hematite, lapis lazuli, limestone, marble, sandstone, serpentine and other stones made up between 3-1% (2007: Chart 7.4). The significance of this is probably rooted not only in the availability of materials such as bone/ivory, but also in cultural, aesthetic and symbolic reasons as well. Limmer did not include metal pendants in her analysis.

In the southern Levant, metal pendants begin to appear primarily from the Middle Bronze Age, becoming common and more varied during the Late Bronze Age. Most forms of the Iron Age II are a direct continuation of those found in the Late Bronze and Iron Age I. New forms appearing in the Iron Age II were apparently the products of Phoenician craftsmen such as Type I.Ia-b Solid and Hollow Spherical Metal Pendants (Fig. 22: 1-6), Type I.12 Amphora-Shaped Metal Pendants (Fig. 22: 30-32) and Type I.14 Round Medallion Composite Metal Pendants (Fig. 22: 34-36). Types I.6 (Bell – Fig. 22: 6) and Type I.7 (Composite-Metal Hoop and Bead – Fig. 22: 27-28).

By the end of the Iron Age I, a distinct change may be discerned in the amount and variety of metal pendants. Some Late Bronze Age types diminish or disappear altogether by the Iron Age II and the repertoire of forms becomes less varied. For example, Type I.3 Pomegranate Metal Pendants (Fig. 22: 8-10) are locally popular during the Late Bronze and Iron Age I, but are very rare during the Iron Age II. Similarly, Type I.4 Crescent Metal Pendants (Fig. 22: 11-25) are very popular throughout the Late Bronze and into the Iron Age I, but are nearly absent in the Iron Age II.

While metal pendants may be made of one or more pieces, stone pendants are made of one piece with little or no decoration and are found in a limited repertoire of forms that are usually not culturally or chronologically instructive. Only Type II.4 Lotus Bud Stone Pendants (Fig. 23: 13-17), that are of Egyptian inspiration, are found during the Late Bronze to Iron Age II, though this form exhibits no typological development throughout this time. Type II.1a Stone Pendants (Fig. 23: 5), a variant of the common Type II.1 Elongated Drop Stone Pendant (Fig. 23: 1-4), is so far identified in only a limited number of examples so that its definition as characteristic of the Iron Age I-II period is uncertain. Type II.2b Inverted Triangular Stone Pendants (Fig. 23: 8-10) were probably of foreign inspiration. Though local examples from stratigraphic contexts congregate around the Iron Age II to Persian periods, this distinctive type is found much earlier in Mesopotamia, Iran and Southern Europe, suggesting that all local examples are imports that may have been in circulation as trade items throughout an extended region for a very long time. Type II.3 Truncated Conical Stone Pendants (Fig. 23: 11-12) are often found as stamp seals (Keel, Shuval and Uehlinger 1990; Keel 1995) and the form is generally indicative of the Iron Age I-II periods. Type II.9 Weight-Shaped Stone Pendants (Fig. 23: 23-24) may have been used as weights and not necessarily pendants. These have a long lifespan and appear to have been especially popular in the Iron Age II, possibly having been adopted by the Phoenicians.

Bone and shell are inexpensive, readily available and easily shaped materials; pendants made of these materials may appear in many different forms. Ivory is more expensive but is also relatively easy to work and because of its similar appearance and characteristics, is often used to fashion the same kinds of objects as those made in bone. Bone naturally lends itself to the fashioning of elongated or flat items because this is the natural shape of most bones. Shell pendants are limited to the different natural forms of shells, which may also bear symbolic/cultic significance.

Bone/Ivory Pendant Types III.1 (Club – (Fig. 24), III.2 (Plaque – Fig. 25) and III.5 (Mallet-Shaped – Fig. 26: 4-10) and their variants are all typical of the Iron Age II in the southern Levant, but are rare outside this area and appear to have been a local invention. While the club and plaque pendants begin in the late Iron Age I and continue into the Iron Age II, Type III.5 Mallet-Shaped Pendants also begin during the Iron Age I and continue into the Iron Age IIA and are not found in the latter half of this period.

The use of shells as pendants is primarily dependant on the aesthetic appeal of the shell form or parts of it and the availability of the shell itself. Type III.4 Shell Pendants (Cowrie Shells with Removed Dorsum– Fig. 26: 2-3) have a specific form which may have borne symbolic/cultic connotations apparently connected to fertility and regeneration. In a similar manner, the use of cassids and bivalves as ornaments is not culturally or chronologically instructive, but simply a utilization of a natural resource that may have had an aesthetic appeal and possibly a symbolic/cultic significance.

Other pendants of bone/ivory and shell found in the Iron Age II are too unique or generalized to have had any meaningful cultural or chronological significance.

Non-Egyptian pendants made of siliceous materials are very few in number and very restricted in the amount of types; use of siliceous materials for pendants or amulets was reserved primarily for Egyptian-style forms (see Herrmann 1994; 2002; 2003; 2006). Most of the non-Egyptian style pendants, such as the Type IV.1 Imitation Cowrie Siliceous Pendants (Fig. 27: 1-2) are essentially imitations of forms more often produced in other materials of lesser symbolic value.

7.4.6. Egyptian Amulets

The majority of Egyptian-style amulets in the southern Levant are made of siliceous materials. Other materials include copper alloy, gold and various types of semi-precious stones such as carnelian, in addition to bone and ivory. Egyptian-style amulets are common in the southern Levant, primarily during the Late Bronze Age II and onwards. By the end of the Late Bronze Age, their amount greatly overshadows local amulet forms (McGovern 1985: 95). While Egyptian political and cultural domination is probably responsible for their proliferation during the Late Bronze and beginning of the Iron Age I, lack of direct Egyptian control during the Iron Age II posits Phoenician trade as the likely cause for their continued use in the southern Levant (Bloch-Smith 1992: 84-85) and dissipation throughout the Mediterranean. Because these are often representations of clear cultic or religious nature, they are most often regarded as amulets, conferring protective powers to their wearers. These items comprise a large, extremely diverse and complex category of objects.

The large amount of Egyptian-style amulets found throughout the southern Levant and elsewhere during the Iron Age II posits their comprehensive and inclusive study to be far beyond the scope of this study. Monumental works concerning such amulets from the southern Levant have been recently published by C. Herrmann (1994; 2002; 2003; 2006) in which all available published and unpublished examples have been meticulously catalogued and studied. Herrmann's initial work on the local Egyptian-style amulets (1994) continues earlier studies, the most widely known of which is Petrie's (1914) and later also Andrews's (1994) inclusive publications, which were based primarily on the objects from Egypt itself. McGovern's (1985) work was the first to focus on the pendant-amulets from the southern Levant but his research was limited primarily to the Late Bronze Age material from Tel Beth-Shean.

Herrmann's 1994 volume catalogued 1433 amulets, the majority of them provenanced items from the southern Levant. This work also created a typological structure for their classification that divided them into three general groups: anthropomorphic, zoomorphic and various objects, with a further subdivision within each general group as to specific type or attributes. Subsequent works by Herrmann (2002; 2003; 2006) provided data on 1578 more amulets from excavations not yet fully published or recently published, as well as finds from several private and university collections. Because these studies have given thorough treatment to the subject and future studies by Herrmann will certainly continue to do so, these objects are not dealt with in depth in this study.

Though Egyptian-style pendants begin during the Late Bronze Age in the southern Levant, Egyptian-related forms are completely lacking during the Late Bronze Age IA, and in terms of the pendants, there does not appear to have been any significant Egyptian influence until the Late Bronze Age IB at the very earliest (McGovern 1985: 97). However, there is a dramatic increase in Egyptian-style pendants during the Late Bronze Age IIB (1985: 87, 96) when they become common as Egyptian political hegemony reached its peak and the Egyptian influence becomes predominant. This suggests that the numerous military campaigns launched by Ahmose and Thutmose I-II had very little effect on cultural life in Canaan (1985: 97), but those of their successors, who pushed the boundaries of Egyptian political and military hegemony further north, apparently caused elements of Egyptian culture to take firmer root in the southern Levant (idem: 99-100).

According to McGovern, the pendants themselves and the requisite knowledge to manufacture them were brought into the southern Levant by foreigners and not by trade (McGovern 1985: 101). This is because a local jewelry industry that knew how to produce and work faience was already present in the southern Levant during the Middle Bronze Age II and the Late Bronze Age. Local craftsmen quickly learned the various forms and adopted them, probably making some of the pendants, as not of them are found in Egypt itself (1985: 101).

Most of the Egyptian-style pendant types introduced into the southern Levant during the Late Bronze Age IIB continued in use during the Iron Age I. At the beginning of the Iron Age I, Egyptian political and cultural domination was still strong though by its end, Egyptian control had considerably weakened.

The amulets represent the major deities of the complex and diverse Egyptian pantheon. Most are found during the Late Bronze Age IIB and continue onwards into the Iron Age I and the Iron Age II, but some, such as Toth, Anubis, Hat-Mehit, Neit and Nephthys, appear locally only during the Iron Age II. By this time, use of Egyptian-style pendants had become so well entrenched so that local society was not only producing them, but was also possibly using them in a different way than the Egyptians themselves. For example, many of the amulets in Egypt were made for the elaborate mummification rites in order to ensure protection and resurrection of the deceased in the afterlife, but the local populace of the southern Levant did not carry out these rituals. In addition, certain aspects of the amulets, such as use of specific symbolic colors, were not as strictly adhered to in the local examples as in the Egyptian ones. Thus, while a broad range of pendant types was in use during the Iron Age II, many of these are probably not of Egyptian manufacture but of Egyptian inspiration, representing concepts and powers that may have been different from that imparted to them by the Egyptians themselves. This is also evident in the craftsmanship of many of the local pendants that is generally inferior in detail compared to their Egyptian counterparts. Some scholars have also suggested that the adoption and use of Egyptian imagery reflects the religious preferences of the elite and not of the common people (Keel and Uehlinger 1998: 259; *contra* McGovern 1985: 102).

The role of the Phoenicians in the propagation of Egyptian-style amulets should also be considered. Phoenician eclecticism is well-known for its adoption of Egyptian artistic motifs, even when these had become obsolete in Egypt itself (Markoe 1990a; 1990b; 1990c). During the Iron Age II, the minimal Egyptian cultural influence as expressed in other jewelry categories (section 3.2.1.) finds better expression in Egyptian-style pendants. If direct Egyptian influence was minimal in the material culture of the Iron Age II, the continuing presence of Egyptian-style amulets was probably the result of Phoenician adoption and assimilation of previous Egyptian elements and their subsequent propagation throughout all the areas affected by Phoenician trade and colonization.

Amulets were worn for a variety of reasons and Petrie (1914) classified them into several broad categories according to their supposed function. These include a) amulets of *similars* (homopoeic), in which objects having a resemblance to one another enable those who possess one to have control or protection from or by the other, the strength or other qualities being represented or otherwise expressed symbolically in the similar amulet, b) amulets of *powers* (dynatic) in which the amulet symbolically confers a power (e.g., the hand amulet conferring the power of action), c) amulets of *property* (ktematic), in which the amulets represent material goods needed by the deceased for the afterlife, d) amulets of *protection* (phylactic), in which the amulet indirectly invokes the protection of an external force, not necessarily a divinity, and e) amulets representing *Gods* (theomorphic), in which an amulet in the image of a deity invokes the protective powers or qualities of that deity to the wearer. In the Iron Age II of the southern Levant, Egyptian-style amulets were probably used in the dynatic (powers), phylactic (protection) and theomorphic (gods) sense. However, the specific manner of their use and their significance in the local society of the Iron Age II in the southern Levant is not necessarily the same as that of the Egyptians at the same time and may only be inferred.

As is well-known, the Egyptians were very superstitious and in mortal fear of death. Their complex mythology thus dealt obsessively with the afterlife, reincarnation and regeneration. The threats and dangers of everyday life were often overcome by belief in the patronage and protection of various deities. The proximity of the Egyptians to animals along the Nile River valley brought about numerous forms of animal worship. Most of these represent deities, many of whom bear animalistic features themselves. In addition, the amulets endowed their wearers with the qualities or characteristics of that animal or conversely, acted as potent protection from its negative traits. Various objects, such as the 'eye of Horus' were often depicted as amulets, often representing concepts or powers in themselves (Cahill 1996). Many of these were also incorporated as elements within other amulets, giving them added meaning.

Many animals are rendered as amulets but not all the Egyptian pantheon is represented in amulet form and a large number of animal-headed figures are difficult to identify with any particular deity. The Egyptians believed that their gods could manifest themselves in animal form but there were not enough animals to represent all the various deities; thus various representations of one species may represent several different deities (Andrews 1994: 14). Compounding the complexity, different gods were worshipped in different forms and for different purposes in various portions of ancient Egypt itself (see Budge 1930; Petrie 1914; Bonnet 1952; Rudolph and Rudolph 1973; Andrews 1994; Watterson 1999).

7.4.7. The Cultural Context of Pendants

Pendants are commonly depicted in Late Bronze and Iron Age terracotta plaques, usually as part of a beaded necklace that may also include additional pendants, rather than solitary pieces.

A beaded necklace with a Type I.10 Double Concentric Spiral Wire Metal Pendant (Fig. 22: 29) is depicted on a bronze female figurine of a goddess from Lebanon, probably to be dated to the Late Bronze Age (Cornelius 2004: fig. 14), and simple, elongated pendants are known on figurines from Gezer, also probably of Late Bronze Age date (Macalister 1912c: pl. 220: 1, 20), and on a female figurine tambourine player from Tell Deir 'Alla, dated to the Late Bronze Age (Franken 1960: pl. 13a).

A necklace and crescent pendant arrangement is seen on a female plaque figurine from Gezer (Macalister 1912c: pl. 221: 25), on figurine fragments from Tel Aphek, Kibbutz Revadim (Beck 1986) and Tel Ḥarasim[249] (Givon 1995: fig. 16: 2), and on a painted stone female figurine from Saheb in Jordan (Fischer 1997: fig. 25), all dated to the Late Bronze Age or Iron Age I. On a gold pendant of the Late Bronze Age from Minet el-Beida, a crescent and two astral symbols are depicted on a nude female holding lotus stalks (Winter 1983: 114, fig. 43). The crescent was also a Mycenaean amulet, as seen on a female terracotta figurine from Greece (Kilian-Dirlmeier 1980: 33-34, fig. 2: 20). Some examples of crescents found in archaeological excavations (e.g., at Late Bronze Age Megiddo, see Loud 1948: pl. 213: 80) appear to have been too large and heavy for people and were perhaps intended for animals, who were also equipped with protective amulets.

Pendants of circular form on female figurines continued in use during the Iron Age II, as seen on a female(?) figurine from Bethsaida (Arav and Freund 1999: fig. 39). Depictions of rounded pendants, possibly with a star or flower decoration (Type I.2c Metal Pendants, of the Bronze Age) have been found at Lachish, of unclear date (Kletter 2004a: fig. 23.53: 2), Tell es-Safi/Gath, attributed to the Late Bronze Age (Maeir 2003), Hazor Stratum VIII attributed to the 8th century (Yadin et al. 1960: pl. 76: 12), Tell Sera, dated to the 7th century (Oren 1993: 1333; Paz 2003: fig. 7: 3), Mefalsim (Paz 2003: fig. 7: 2, 4) and a circular star and crescent pendant is found on a basalt statue of a Late Bronze Age Canaanite priest or diety from Hazor (Bonfil 2011).[250] An Egyptian New Kingdom depiction of a Syrian wearing a circular pendant is known from the tomb of Tutanakhamun (Sparks 2004: fig. 3.6: D), and such pendants are common on other Egyptian illustrations of Asiatic men, as in the battle scenes of Thutmoses IV (Pritchard 1954: fig. 314-315). These pendants are also depicted on Late Bronze Age Syrian-type plaque figurines found in Syria, as at Tell Alalakh, Hama and Tell Mumbaqat (Conrad 1985: figs. 5-6, 8-9). This suggests that either the Iron Age examples cited above actually date to the Late Bronze Age, or that this type continued in use for a very long time throughout the southern Levant.

Cypriot votary statues from the 6th century depict males with broad collars of Egyptian style, made of several strands of beads and pendants (Karageorghis 2000: figs. 176, 179, 182), and females wearing beaded necklaces with a large pendant in the center (idem: figs. 184, 214). These objects may well have been Phoenician products that retained archaic Egyptian traits. A torso of a larger-than-life male statue from the Phoenician site of Sarepta in Lebanon, dated to the 6th–5th centuries (Markoe 1990a: fig. 15), bears a crescent and sun pendant hanging from a broad necklace of beads and drop-shaped pendants (idem: figs. 11, 12, 15, 16).[251] Neo-Assyrian pictorial reliefs of the Iron Age II sometimes depict large, crescent-shaped objects worn by kings that are interpreted as protective symbols of the deities (Fales and Postgate 1992: 45 [far left]; Ornan 2005b: 133-134).

Pendants are common in Iron Age II Neo-Assyrian depictions, worn as solitary items on a chain, such as a Maltese cross on the chest of Shamshi-Adad dated to the 9th century (Pritchard 1954: fig. 442), or several pendants strung together on a necklace representing the protective symbols of the major deities, such as those adorning Assurnasirpal II from Nimrud, also dated to the 9th century (idem: fig. 617). In Neo-Assyrian art, other than the king and deities, no other personage was depicted wearing pendants bearing symbols attributed to the gods, therefore these symbols are considered to be protective in nature (Ornan 2005b: 133-134). In addition to the protective powers associated with them, such pendants also indicated high rank and status in Neo-Assyria.

In summary, in the southern Levant pendants appear to have been worn by men and women alike. Most of them certainly had a cultic or even apotropaic significance and could have also been symbols of rank and status. Crescent pendants were usually, though not exclusively, associated with women (see above Type I.4a-b Metal Pendants), though most of the other pendant types of the Iron Age II cannot at present be associated with a specific gender.

7.5. Beads

Beads are one of the simplest and most ancient forms of jewelry. A bead is defined as any object used for adornment that has a stringing hole pierced through a central axis. Necklaces are usually made of beads, but they can also be used as singular items for adornment and as items of cultic or symbolic significance.

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249 Although this fragment lacks the upper chest area, it is identical to the fragments from Kibbutz Revadim and Tel Aphek, which were probably all made from the same mold.

250 A circular rosette depicted as an earring is known from a fragment of a ceramic female plaque figurine found near Tel Malha (IAA reg. no.71.5164). The neck of this figurine is also adorned with a trapezoidal-shaped pendent decorated with lines. Both these features are so far unique among jewelry depictions on local figurines.

251 This is a further example of the recurring use of archaic styles by the Phoenicians during the Iron Age II, as the type of pendant depicted in the Sarepta statue (Type I.4 Metal Pendants, see above Part II, sect. 7.4.1, Fig. 22: 16-25) was very common in the Late Bronze Age, contemporary with the Egyptian New Kingdom. In the Iron Age II, however, this pendant was rare, and in addition to the statue from Sarepta that dates to the 6th–5th centuries, a few examples are known from the Phoenician necropolis at Akhziv (Mazar 2001: fig. 66: 20, Dayagi-Mendels 2002: fig. 4.21: 62) and a single example from Tell el-Farʽah (S) (Petrie 1930: pl. 39: 456). All of these are, however, of debased craftsmanship compared with their Late Bronze Age predecessors.

Beads are common among jewelry because they may repeatedly occur as parts of an existing creation such as a necklace, girdle, headdress or armlet, or be sewn on the fringes of garments. Most beads certainly were used on necklaces and bracelets though they may also function in a similar manner to pendants, seals, amulets, spindle whorls, tools, net weights, burnishers and touch stones (Francis 1988; Hughes-Brock 1999: 279-280). Beads are the single most common burial provision appearing in over a third of all Iron Age burials so that their frequency would at least appear to support a possible amuletic use in addition to bodily ornamentation (Bloch-Smith 1992: 81).

The classification of beads in a logical scheme is a complicated task. Beck's (1928) research provides a classification system and a helpful nomenclature.[252] However, in Beck's system, form is the only consideration so that his typology includes a very large amount of types, but many of the same forms may be unrelated. As beads may be made of a wide range of materials, they have a great diversity in form, but the use of different materials usually dictates different types of form and decoration, e.g., what may be achieved in metal is often not possible in stone. Thus, beads of different material by their nature lend themselves to certain forms and some forms occur only in a specific type of material.

In order to simplify the classification system, the bead typology in this study first classifies beads by *material* into six separate categories (Type I – Metal [Fig. 28], Type II – Stone [Figs. 30-23], Type III – Siliceous Materials [Fig. 31; 25, 34: 1-8], Type IV – Terracotta [Fig. 33: 9-18], Type V – Bone/Ivory [Fig. 34], Type VI – Shell [Fig. 35: 1-8]) and then by *form.* Thus, though the same form may appear in more than one category, the distinction of the material used to make it may provide an indication of technological and social processes involved in jewelry manufacture and use that would not have been readily apparent if form were the only consideration.

7.5.1. Beads Type I – Metal

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
I.1	Granule	LB – Persian	Common	Fig. 28: 1-3
I.1a	Double Tubular (Spacer) Granule	Iron Age IIA?	Rare	Fig. 28: 4
I.2	Wound-wire	LB – Persian	Rare	Fig. 28: 5-6
I.3	'Winged'	Late Iron Age II	Rare, Phoenician?	Fig. 28: 7
I.4	Hollow Spacer	Late Iron Age II	Very Rare	Fig. 28: 8
I.5	Plain Spherical or Squat Globular Hollow	MB – Late Iron Age II	Common	Fig. 28: 9-10
I.5a	Squat Globular, Barrel or Biconical Hollow – Fluted	Middle Bronze – Persian	Common	Fig. 28: 11-14
I.6	Decorated Spherical Hollow	Late Iron Age II	Rare	Fig. 28: 15
I.7	Flat Disk	LB – Late Iron Age II	Rare	Fig. 28: 16-17
I.8	Barrel-Shaped or Convex Biconical	LB – Persian	Common	Fig. 28: 18-21
I.9	Wround Flat Strip	EB – Iron Age	Rare?	Fig. 28: 22-23
I.10	Cylindrical	Chalcolithic – Persian	Common	Fig. 28: 24-26
I.11	Spacer	LB – Iron Age II	Rare	Fig. 28: 27
I.12	Crenelated Disk	Persian period	Rare	---
I.13	Segmented	LB – Iron Age II?	Rare	Fig. 28: 28
I.14	Short Truncated Bicone	EB – Iron Age II	Uncommon	Fig. 28: 29-30
I.15	Short Truncated Convex Bicone (lentoid-shaped)	Iron Age I – Persian	Rare	Fig. 28: 31

Beads Type I.1 – Granule (Fig. 28: 1-3)

Beads made by soldering rings made up of five to six granules (Beck Type XXV.A.I.d.). Such rings may be joined in stacks to form cylinders.

Judging by their presence at Tell el-ʿAjjul, these beads first appear locally in the Late Bronze Age if not slightly earlier, but are more common from the 13th century onwards. In the Greek world, these beads occur from the 15th century onwards from such sites as Mycenae (Higgins 1961: 74, pl. 106) where they are found in gold. Granule beads are also widespread throughout the Mediterranean, where they are usually dated to the 7th-5th centuries and associated to the Phoenicians (Densmore Curtis 1925: pl. 3; Quillard 1979: [Type 'T'] pp. 111, 115, pls. 12-14, 29: T; Moscati 1988: 377).

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[252] In this study, Beck's classification has been noted where possible.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	5	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 23: 145	From looted hoard. Excavator's date. Possibly 7th-6th c. heirlooms.
Tel Shor	Silver	4	Burial	6th-4th c.	Golani forthcoming G	From individual burial.
Tel Michal	Silver	10	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 8: 35, 36, 38-43	From individual cist tomb.
Kamid el-Loz	Silver	36	Graves 2, 9, 15, 22	6th-4th c.	Poppa 1978: pls. 4: 5-6, 9: 2-5, 12: 10-16, 14: 10-14	From individual cist tombs.
Tell es-Saʿidiyeh	Silver	54	Graves 159, 27	6th c.	Tubb 2007: fig. 11: 1; 15: 7-8	From two graves of young females.
Tel Miqne-Ekron	Silver	8	Stratum IB	7th c.	Golani and Sass 1998: 72, fig. 14: 3	From sealed hoard.
Tawilan	Gold	4	From hoard	10th-9th c.	Ogden 1995: figs. 8.4, 8.19, 8.33	From hoard. Some beads threaded on earring hoop.
Tell el-Farʿah (S)	Gold	13	Tomb 241	10th-9th c.	Petrie 1930: pl.37: lower right	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Silver	Unclear	Tomb 853	11th-10th c.	Starkey 1930: Type 'P': 111	From a single-period burial. Dating according to Laemmel 2003: Table 5.
Tell el-Farʿah (S)	Silver	1?	Tomb 859	12th-11th c.	Starkey 1930: Type 'P': 111	From a single-period burial. Dating according to Laemmel 2003: Table 5.
Tell el-Farʿah (S)	Gold	2	Tomb 532	12th c.	Petrie 1930: pl. 36: 532	Dating according to Laemmel 2003: Table 2.
Megiddo	Gold	5	Stratum VIIA	12th c.	Loud 1948: pl. 215: 106	Dating according to Mazar 2008.
Tell es-Saʿidiyeh	Electrum	72	Tomb 101	13th c.	Pritchard 1980: figs. 19: 19-20; 49: 2	Around neck in individual burial, with over 500 carnelian beads.
Tell el-ʿAjjul	Gold	3	Unclear	16th? c.	Petrie 1952: pl. 7: lower right	Also depicted in Petrie 1934: pl. 18: 96-97 but drawn incorrectly. Excavator's date.
Tel Beth-Shemesh	Silver	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-2442

Beads Type I.1a – Double Tubular (Spacer) Granule (Fig. 28: 4)

Spacer beads made of rings of granules successively stacked and soldered together to form a tube, two parallel tubes being then joined to produce a double-tube effect (Beck Type XVII.A.2.a.).

In the sole example of this type found in the Tawilan hoard, the granule tubes were fashioned by alternating rings of six and twelve granules stacked one atop the other, the tubes then joined so that the large and small granule rings would always lie one across from another. Ogden (1995: 74) has noted that such idiosyncrasies of assembly might allow the identification of other products from the same workshop.

While granule beads, even in cylindrical form, are common, the use of two such cylinders joined to produce a spacer bead is rare.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tawilan	Gold	3	From hoard	10th-9th c.	Ogden 1995: 74, fig. 8.30, 8.4	---

Beads Type I.2 – Wound-wire (Fig. 28: 5-6)

Beads of cylindrical or elongated biconical shape made by tightly winding wire around a form (Beck Type XVIII.A.I.a-b.). These beads may bear wire collars at both ends, but these are often missing.

Wound-wire beads are known as early as the 1st Dynasty in Egypt and the Royal Tombs of Ur (Maxwell-Hyslop 1971: 20, pl. 15a). They continue in the 9th century, such as at Lefkandi in Greece (Popham, Touloupa and Sackett 1982: pl. 30: c) through the 7th century, as from tombs at Altintepe in Anatolia (Özgüç 1983: pl. 13b) and at Sardis in western Asia Minor (Densmore Curtis 1925: pl. 3: 11). Locally, they appear in the Late Bronze Age in biconical shape with wire collars at each end and continue through into the Iron Age where they are usually of tubular form. Tubular beads with collars at both ends may have also been made as stringing attachments, such as those found on Type I.4b Metal Pendants (Fig. 22: 16-25).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Silver	1	Tomb ZR X	7^{th}-6^{th} c.	Dayagi-Mendels 2002: 54	Cylindrical – with collars at both ends. Dating according to Dayagi-Mendels.
Tel Miqne-Ekron	Silver	11	Stratum IB	7^{th} c.	Golani and Sass 1998: 72, fig. 14: 4	From sealed hoard. Cylindrical shape.
Tell el-Farʿah (S)	Electrum	1?	Tomb 625	11^{th} c.	Starkey 1930: Type B: 40	From a single-period burial. Dating according to Laemmel 2003: Table 3.
Tell el-Farʿah (S)	Electrum	1?	Tomb 825	12^{th}-11^{th} c.	Starkey 1930: Type B: 40	From a single-period burial. Dating according to Laemmel 2003: Table 5.
Lachish	Gold	1	Level VI	13^{th}-12^{th} c.	Tufnell 1958: pl. 42: 3	Biconical – with collars at both ends. Excavator's date.
Tel Beth-Shemesh	Gold	1	From hoard	15^{th}-13^{th} c.	Tadmor and Misch-Brandl 1980	Not discussed, depicted on book cover.
Tell el-ʿAjjul	Electrum	1	Hoard 1532	15^{th}-14^{th} c.	Petrie 1934: pl. 21: 213	Dating according to Negbi 1970.

Beads Type I.3 – 'Winged' (Fig. 28: 7)

Beads made of two rectangular strips, bent slightly in the middle then placed one upon the other and joined at their ends with an eye-like hole left open in the middle through their width.

Aside from one specimen from Tel Miqne-Ekron, no other examples of this distinctive technique and form are locally known. However, exact parallels are common in silver from several 7^{th} century tombs (Tombs 34, 27 and 31) at the Phoenician necropolises of Ain Dalhia Kebira and Djebila near Tangier (Ponsich 1967: pl. XX: 3, fig. 26 [upper right]; fig. 61 [center]; pl. XLV: 31) where they appear to have been incorporated into necklaces. The finding of this distinctive form and technique at Phoenician sites far removed from Phoenicia may indicate that this is a Phoenician type of bead.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	1	Stratum IB	7^{th} c.	Golani 1996a: fig. 16: 3	Found in sealed hoard.

Beads Type I.4 – Hollow Spacer (Fig. 28: 8)

Rectangular, 'pillow-shaped', quadripartite spacer beads made of two identical impressed sheet-silver pieces soldered together. Four punched stringing holes are found on each of the long sides.

These beads are unique. They may have been a part of a bracelet, possibly incorporating a pendant centerpiece such as the one shown in Fig. 26: 13 (see above). A similar arrangement, probably from Tharros, is dated to the 7^{th}-6^{th} centuries (Marshall 1911: no. 1538).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Silver	3	Stratum IB	7^{th} c.	Golani and Sass 1998: 72, fig. 14: 5	Found in sealed hoard.

Beads Type I.5 – Plain Spherical or Squat Globular Hollow (Fig. 28: 9-10)

Hollow metal beads of spherical or squat globular form (Beck Type I.B.1.a.). These are usually of precious metal, made in two halves formed in a doming block with a perforation punched through their apex and then soldered together. Filing and polishing are often used to conceal the seam between the two halves. Wrapping metal foil over a core, such as on silver examples from Tell Keisan and Akhziv could have also made such beads.

Hollow beads of precious metal are known already during the Early Dynastic period in Mesopotamia and from Troy in the middle of the 3^{rd} millennium (Maxwell-Hyslop 1971: 7-10, 53, pl. 6c). The technique of forming such beads in two halves on a doming block and then soldering the two together also appears locally during the Early Bronze Age, as found in the form of three drop-shaped, hollow gold pendant beads from ʿEin Ha-Meʿara in the western Negev of Israel (Haiman 1989: 180). However, rounded hollow beads appear primarily during the end of the Middle Bronze Age, as at Tell el-ʿAjjul (Maxwell-Hyslop 1971: 126), and continue into the Persian period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell Jemmeh	Silver	1	Unclear	6^{th}–4^{th} c.	Golani forthcoming E	---
Tell Keisan	Silver and Clay(?)	1	Stratum 4	7^{th}-6^{th} c.	Briend and Humbert 1980: pl. 95: 43	Silver foil over a clay(?) core.
Akhziv cemetery	Silver	2	Tomb ZR XXIII	7^{th}-6^{th} c.	Dayagi-Mendels 2002: fig. 4.24: 3	Dating according to Dayagi-Mendels.
Tel Goren (Ein Gedi)	Copper alloy	7	Stratum V	7^{th}-6^{th} c.	Mazar, Dothan and Dunayevsky 1966: pl. 23: 1-6, 17	---
Tel Goren (Ein Gedi)	Silver	2	Stratum V	7^{th}-6^{th} c.	Mazar, Dothan and Dunayevsky 1966: pl. 23: 12, 18	---
Akhziv cemetery	Silver	1	Tomb T.A. 72	9^{th}-4^{th} c.	Mazar 2001: fig. 66: 41	Mixed tomb.
Akhziv cemetery	Copper alloy	1	Tomb T.A. 72	9^{th}-4^{th} c.	Mazar 2001: fig. 66: 40	Mixed tomb.
Akhziv cemetery	Silver	9	Tomb no. 1, Phase 3	9^{th}-7^{th} c.	Mazar 2004: fig. 22: 110-111, 123-129	---
Akhziv cemetery	Gold foil over Glass	1	Tomb ZR II	10^{th}-7^{th} c.(?)	Dayagi-Mendels 2002: fig. 4.1: 25	Mixed tomb. Partial. Gold foil over a glass bead. Dating according to Dayagi-Mendels.
Tell el-Farʿah (S)	Gold	1?	Tomb 231	10^{th}-9^{th} c.	Starkey 1930: Type K: 68	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	1?	Tomb 226	10^{th}-9^{th} c.	Starkey 1930: Type K: 35	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Miqne-Ekron	Gold	1	Stratum IVA	11^{th}-10^{th} c.	Golani forthcoming A	---
Tel Beth-Shean	Gold	2	Level V	11^{th} c.	Unpublished	UM reg. nos. 29-105-11, 29-104-387
Tel Beth-Shean	Electrum	1	Level V	11^{th} c.	Unpublished	UM reg. no. 29-105-13
Tel Beth-Shean	Silver	1	Level V	11^{th} c.	Unpublished	UM reg. no. 29-105-148
Beth-Shean	Gold	4	Tomb 7	13^{th}-12^{th} c.	Oren 1973: figs. 41: 22; 77: 4	---
Tel Beth-Shean	Gold	2	Level VII	13^{th} c.	Unpublished	UM reg. nos. 29-105-6, 29-104-771
Timna	Gold	4	From Sanctuary	14^{th}–13^{th} c.	Kertesz 1988: fig. 82: 91-94	---
Lachish	Gold	1	Fosse Temple	15^{th}-13^{th} c.	Tufnell, Inge and Harding 1940: pl. 35: 56	Excavator's date.
Tel Beth-Shemesh	Gold	4	From hoard	15^{th}-13^{th} c.	Unpublished	UM reg. no. 61-14-866; see Tadmor and Misch-Brandl 1980.
Deir el-Balaḥ	Gold	7	Tomb 114	15^{th}-14^{th} c.	Dothan 1979: ill. 56	From upper part of skeleton.
Tell el-ʿAjjul	Gold and silver	10	Hoard 1313	16^{th}-14^{th} c.	Petrie 1934: pl. 16: 61-66	Dating according to Negbi 1970.

Beads Type I.5a –Squat Globular, Barrel or Biconical Hollow – Fluted (Fig. 28: 11-14)
A variant of Type I.5, these are squat globular, barrel-shaped or biconical hollow beads with a fluted decoration (Beck Type XXIII.B-C.1.a.), carried out by forming into a doming block (Webb 1986: 47) or by chasing or *repousée*. This technique was either executed before joining the two halves or more likely, after the bead was assembled, as long as an inner core of bitumen or clay supported the metal from the inside.

These beads have a long history; most examples appear to belong to the end of the Middle Bronze and Late Bronze periods yet a few are found in the Iron Age II and into the Persian periods as well. The earlier Bronze Age forms are often quite elaborate, featuring two collared tubular extensions on either side of the bead. These latter types may have been cast, as appears to have been the case in the beads from Tell el-ʿAjjul, whose decorative features are sharply accentuated. Fluted beads in general are quite common from the Middle Bronze Age onwards (see below Type III.16 Siliceous Bead; Fig. 32: 21-36), though the use of precious metals such as gold in the production of this form is generally uncommon during the Iron Age II, appearing primarily during the Late Bronze Age in the southern Levant and Cyprus (Gjerstad 1948: fig. 35: 10).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Jordanian Hoard	Silver	1	From looted hoard	5th c.	Kraay and Moorey 1968: pl. 23: 146	Excavator's dating. Probably heirloom from 7th-6th c.
Tell el-Farʿah (S)	Gold	1?	Tomb 241	10th-9th c.	Starkey 1930: Type K: 80	With collars at both ends. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Akhziv cemetery	Gold over Bitumen core	1	Tomb Z VI	10th-9th c.	Dayagi-Mendels 2002: fig. 3.7: 13	With collars at both ends. Dating according to Dayagi-Mendels.
Tell el-Farʿah (S)	Gold	1?	Tomb 853	11th-10th c.	Starkey 1930: Type K: 65	With collars at both ends. From a single-period burial. Dating according to Laemmel 2003: Table 5.
Tell el-Farʿah (S)	Silver	4	Tomb 119	11th c.	Starkey 1930: Type K: 14	From a single-period burial. Dating according to Laemmel 2003: Table 1.
Tell el-Farʿah (S)	Gold	1?	Tomb 552	12th c.	Starkey 1930: Type K: 43	With collars at both ends. Dating according to Laemmel 2003: Table 2.
Tell el-Farʿah (S)	Gold	1?	Tomb 532	12th c.	Starkey 1930: Type K: 82	With collars at both ends. Dating according to Laemmel 2003: Table 2.
Megiddo	Gold	1	Stratum VIIA	12th c.	Loud 1948: pl. 215: 103	Dating according to Mazar 2008.
Megiddo	Gold	1	Tomb 912B	14th c.	Guy 1938: pl. 132: 32a	Excavator's date.
Akko – Persian Garden	Gold	13	Tomb B3	14th c.	Ben-Arieh and Edelstein 1977: fig. 14: 7-9; pl. VIII: 11	---
Lachish	Gold	4	Burial cave 4002	15th-9th c.	Tufnell 1953: pl. 66: 64	Mixed tomb. Excavator's date.
Tel Beth-Shemesh	Gold	"At least 5"	From hoard	15th-13th c.	Tadmor and Misch-Brandl 1980: fig. 5	Four more, unpublished UM reg. no. 61-14-867
Tell el-ʿAjjul	Gold	3	Hoard 447	15th-14th c.	Petrie 1934: pl. 20: 162-164	Excavator's date.
Deir el-Balaḥ	Gold	20	Tomb 118	15th-14th c.	Dothan 1979: ills. 175, 178, 189	---
Megiddo	Gold	3	Stratum IX	16th-15th c.	Loud 1948: pl. 209: 33	Excavator's date.
Tell el-ʿAjjul	Gold	6	Hoard 1203	16th-15th c.	Petrie 1934: pl. 15: at center; 16: 56, 58-60	Excavator's date.
Tell el-Farʿah (S)	Gold?	1	Unclear context	17th-16th c.	Petrie 1930: pl. 9: 59	Excavator's date.
Tell el-Farʿah (S)	Gold	1	Tomb 1002	17th-16th c.	Starkey and Harding 1932: pl. 72: 19	Dating according to Laemmel 2003: 59.

Gezer	Gold	2	Unclear	19th-18th c.	Macalister 1912c: pl. 31: 20, 23	Excavator's date.
Tell el-ʿAjjul	Gold	2	Unclear	20th-18th c.(?)	Petrie 1934: 169, 172	Excavator's date.
Lachish	Copper alloy	1	Unclear	Unclear	Tufnell 1953: pl. 67: 123	With accentuated ribs.

Beads Type I.6 – Decorated Spherical Hollow (Fig. 28: 15)

Hollow globular beads made in similar fashion to Type I.5 Metal Beads. The threading holes are decorated with wire collars, each surrounded by triangles of granular decoration.

Locally, such beads have been found at Kamid el-Loz and Tel Miqne-Ekron but the specific decorative elements, i.e., the collars at each end and the triangles of granulation around them, find parallels in electrum beads from Carthage dated to the 7th-6th centuries (Moscati 1988: 377) and throughout Phoenician North Africa where they are dated to the 7th century (Quillard 1979: Type α, pp. 112, 116, pl. 29α). Somewhat similar beads in gold have also been found in Altintepe in Anatolia, dated to the 7th century (Özgüç 1983: pl. 13e-f), indicating that this decorative arrangement was not restricted to the Phoenician sphere.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Kamid el-Loz	Gold	23	Unknown	Persian?	Adler 1994: pl. 18: 2; 19, 20	Acquired in local market.
Tel Miqne-Ekron	Silver	3	Stratum IB	7th c.	Golani and Sass 1998: 72, fig. 14: 6	From sealed hoard.

Beads Type I.7 – Flat Disk (Fig. 28: 16-17)

Washer-shaped beads (Beck Type I.A.2.b.) made of a thin flat metal ribbon bent around with the two ends almost joining.

Such objects were employed as beads in a similar manner to Type III.1 Siliceous Small Flat Disk Beads (Fig. 31: 1-4). However, they may not be beads at all and may have simply served as components in a larger, disassembled creation that remains unidentified.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv (er-Ras Cemetery)	Silver	1	Tomb ZR XXVIII	7th-5th c. BE	Dayagi-Mendels 2002: fig. 4.20: 16	Dating according to Dayagi-Mendels.
Akhziv cemetery	Unidentified metal	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 22: 28	---
Timna	Copper alloy	3	From Temple	14th c.	Kertesz 1972/73: 49	---
Tel Miqne-Ekron	Silver	1	Unstratified	---	Golani forthcoming A	---

Beads Type I.8 – Barrel-Shaped or Convex Biconical (Fig. 28: 18-21)

Hollow elongated beads (Beck Type I.D.1.b.) made of two halves of sheet-metal formed on a doming block, and then joined together. These beads usually have a barrel-shaped or elongated form, sometimes accentuated with wire collars at each end. To strengthen such hollow beads and preserve their form, some were made by wrapping thin foil over a core. Other examples were made by forming the two halves over a removable core and then joining them together.

The beads from Tel Miqne-Ekron were made of two oval silver sheets impressed into a doming block and then joined together around a fill of clay. The seam of the join was filed and rubbed carefully, making it nearly invisible to the naked eye. The two ends of the bead protrude as a collar through which the bead was strung. On one side, some of the beads retain a faint relief decoration resembling a leaf done by chasing from the inside while the bead halves were formed on the doming block.

Hollow elongated beads, often with wire collars at both ends and a fluted, chased decoration along their length, begin to appear in Cyprus during the Late Bronze Age II (Gjerstad 1948: 504-505, fig. 65: 24-27) where they have been found in gold from Enkomi Tomb 11 (Gjerstad et al. 1934: pl. 84: 271) and Marion Tomb 50 (Gjerstad et al. 1935: pls. 60: 18). Locally, similar beads in gold appear at the same time and continue through the Persian period.

A bead from Tell es-Saʿidiyeh is somewhat unique in form, being formed of two flat plates of sheet-metal, joined together to form a 'box'-like bead of convex biconical form. The ends were then decorated by granule rings, the two flat sides of the bead were further decorated by lines and lozenges of granules.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell es-Sumeriyah (Lohamei HaGeta'ot)	Silver	1	Tomb 10	5^{th}-4^{th} c.	Messika 1996: fig. 4: 6	Found near jaw, possibly threaded on earring.
Tell es-Sumeriyah (Lohamei HaGeta'ot)	Copper alloy	1	Tomb 5	5^{th}-4^{th} c.	Messika 1996: fig. 4: 8	---
Tel Michal	Copper alloy	4	Tomb 2002	6^{th}-4^{th} c.	Herzog and Levy 1999: fig. 10: 8, 9, 13, 14	From individual burial within a storage jar. Part of necklace threaded by copper alloy wire.
Tel Michal	Copper alloy	2	Pit 256	6^{th}-4^{th} c.	Herzog and Levy 1999: fig. 10: 11	From individual burial within a storage jar. Part of necklace threaded by copper alloy wire.
Tell es-Saʿidiyeh	Silver	1	Grave 159	6^{th} c.	Tubb 2007: fig. 11: 3	---
Akhziv (er-Ras Ceme-tery)	Silver	1	Tomb ZR III	7^{th}-6^{th} c.	Dayagi-Mendels 2002: fig. 4.2: 14	Mixed tomb. With collars at each end. Dating according to Dayagi-Mendels.
Tel Miqne-Ekron	Silver and Clay(?) core	13	Stratum IB	7^{th} c.	Golani forthcoming A	---
Megiddo	Lead? (probably silver)	1	Stratum III	8^{th}-7^{th} c.	Lamon and Shipton 1939: pl. 91: 74	Excavator's date.
Akhziv cemetery	Silver	2	Tomb T.A. 69	9^{th}-4^{th} c.	Mazar 2001: fig. 60: 16, 17	Mixed tomb.
Tell el-Farʿah (S)	Copper alloy	1?	Tomb 212	10^{th}-9^{th} c.	Starkey 1930: Type J: 84	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	1?	Tomb 231	10^{th}-^{9th} c.	Starkey 1930: Type D: 139	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Electrum	1?	Tomb 506	11^{th} c.	Starkey 1930: Type N: 131	From a single-period burial. Dating according to Laemmel 2003: Table 2.
Beth Shean	Gold over a core	2	Tomb 66A	12^{th} c.	Oren 1973: fig. 42b: 39	Probably from anthropoid coffin burial.
Beth Shean	Copper alloy	1	Tomb 66B	12^{th} c.	Oren 1973: fig. 42b: 40	Probably from anthropoid coffin burial.
Tell el-Farʿah (S)	Silver	1?	Tomb 552	12^{th} c.	Starkey 1930: Type D: 114	Dating according to Laemmel 2003: Table 2.
Tell el-Farʿah (S)	Copper alloy	1?	Tomb 902	13^{th}-12^{th} c.	Starkey 1930: Type D: 110	Dating according to Laemmel 2003: Table 6.
Tel Beth-Shean	Silver	3	Level VII	13^{th} c.	Unpublished	UM reg. no. 29-104-370
Lachish	Gold	1	From Fosse Temple	15^{th}-13^{th} c.	Tufnell, Inge and Har-ding 1940: pl. 35: 53, 57	Excavator's date.
Tel Beth-Shemesh	Gold	At least 3	From hoard	15^{th}-14^{th} c.	Tadmor and Misch-Brandl 1980: fig. 5	---

Deir el-Balaḥ	Gold over a core	2	Tomb 118	15th-14th c.	Dothan 1979: ills. 175, 191	---
Tell el-ʿAjjul	Gold	2	Hoard 1966	15th-14th c.?	Petrie 1934: pl. 18: 99-100	---
Beth Shean	Copper alloy	1	Tomb 42	15th c.	Oren 1973: fig. 34: 8d	---

Beads Type I.9 – Wround Flat Strip (Fig. 28: 22-23)

Very small beads appearing as small flat disks or short tubes and made by cutting a thin strip of sheet-metal and then winding it around a thin wire or stick.

The technique of producing such beads first appears in copper beads found in Anatolia from the beginning of the 7th millennium (Esin 1993) and is locally known already during the Early Bronze Age. Though only a very few examples are actually published, this form is probably more common than appears as these beads are so small that they are more often than not overlooked during excavations or not included in publications.[253]

Beads Type I.10 – Cylindrical (Fig. 28: 24-26)

Cylindrical beads (Beck Type I.D.2.b.) made of sheet-metal rolled into a tube, the two ends then soldered or fused together by heat and pressure. While most such beads are plain, some are equipped with wire collars at their ends or otherwise decorated with granular decoration.

This is a simple form that begins during the Chalcolithic-Early Bronze Age in copper alloy, later also in silver and gold. From the Late Bronze Age onwards, these beads may appear with granular decoration, such as in a gold example from Alalakh dated to the 15th century (Maxwell-Hyslop 1971: fig. 100), or gold beads from Tombs 532 and 627 at Tell el-Farʿah (S) dated to the 13th-12th centuries (Starkey 1930: Type B: 50; and see also in the Iron Age II at the same site, Starkey 1930: Type B: 60, 64, 72, 86, 90), or also with wire collars at the ends, such as at Tel Michal, dated to the Persian period (Herzog and Levy 1999: fig. 2: 7-8).

Beads Type I.11 – Spacer (Fig. 28: 27)

A flat bead made of several thin cylindrical tubes fused together parallel to one another (Beck Type XVII.A.2.a.).[254]

In metal, such beads are very rare, found from the Late Bronze Age until the Iron Age II, but are more common in stone (Type II.15a Stone Beads; Fig. 31: 6-7) and especially in siliceous materials (Type III.9a Siliceous Beads; Fig. 31: 35-37).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Eshtemoʿa	Silver	4	From hoard	10th c.	Yeivin 1990: fig. 17: 7; 22, 23	With granular decoration of chevrons.
Megiddo	Gold	1	Stratum IX	16th-15th c.	Loud 1948: pl. 209: 34	Excavator's date.

Beads Type I.13 – Segmented (Fig. 28: 28)

Tubular-shaped beads with a wavy ribbed decoration along their length (Beck Type XVII.A.1.a.). These beads were made by chasing or *repousée* forming a ribbed pattern onto sheet-metal, then bending the piece into tubular form around a stick or wire.

As an individual bead, this form is uncommon, but the technique is common in the forming of tubular stringing attachments during the Late Bronze Age, especially in Type I.4b Metal Pendants (see McGovern 1985: fig. 66: 268, 270-278).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Metal-unspecified	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 22: 59	Partial
Lachish	Gold	1	Tomb 2007	14th c.	Tufnell, Inge and Harding 1940: pl. 35: 72	From Fosse temple. Excavator's date.

Beads Type I.14 – Short Truncated Bicone (Fig. 28: 29-30)

Hollow beads of biconical shape, truncated at both ends (Beck Type I.C.1.f.) and made in two halves formed in a doming block with a perforation punched through their apex, then soldered together. Filing and polishing are often used to conceal the seam between the two halves. Wrapping metal foil over a core could have also made such beads.

These beads have a very extended lifespan and are found throughout the Bronze and Iron Ages.

253 A bead of this type from the Early Bronze Age levels at Tel Lod is no more than one millimeter in diameter (Golani forthcoming D).

254 Any bead with multiple, parallel perforations or stringing holes arranged on one plane is commonly called a 'spacer' bead.

Beads Type I.15 – Short Truncated Convex Bicone (lentoid-shaped) (Fig. 28: 31)
Short truncated convex bicone beads (Beck Type I.B.1.f.) made by forming two concave disks on a doming block, perforating their apex and then joining them together.

Such beads are not common; yet appear to have a range from the Iron Age I and into the Persian period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Farʿah (S)	Gold	1?	Tomb 743	6th-5th c.	Starkey 1930: Type L: 40	From a single-period burial. Dating according to Laemmel 2003: Table 4.
Tell el-Farʿah (S)	Gold	At least 5?	Tombs 201, 202,228, 240, 241	10th-8th c.	Starkey 1930: Type L: 40	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	At least 6?	Tombs 206, 220, 506, 523, 632, 642	12th-9th c.	Starkey 1930: Type L: 40	Some from single-period burials. Dating according to Laemmel 2003: 47-48, Tables 2, 3; Israeli 1993: 443.

7.5.2. Beads Type II – Stone

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
II.1	Standard Circular	MB onwards	Common	Fig. 29: 1-2
II.2	Short Oblate Globular	Chalcolithic onwards	Very common	Fig. 29: 3-7
II.3	Short Convex Bicone (lentoid-shaped)	EB onwards	Common	Fig. 29: 8-10
II.4	Short Truncated Bicone	Intermediate Bronze onwards	Very common	Fig. 29: 11-14
II.5	Long Barrel	Chalcolithic onwards	Very common	Fig. 29: 15-17
II.6	Long Truncated Convex Bicone	Chalcolithic onwards	Very common	Fig. 29: 18-21
II.6a	Long Truncated Convex Bicone (flattened or faceted)	EB onwards	Common	Fig. 29: 22
II.7	Long Truncated Bicone	EB onwards	Very common	Fig. 29: 23-25
II.8	Long Truncated Convex Cone	LB – Iron Age II	Uncommon	Fig. 29: 26-27
II.9	Short Cylinder	Chalcolithic onwards	Very common	Fig. 29: 28-29
II.10	Cylindrical	Chalcolithic onwards	Very common	Fig. 29: 30-32
II.11	Tabular Disk	Iron Age II – Persian?	Uncommon	Fig. 29: 33-36
II.12	Scaraboid	MB II – Hellenistic	Common	Fig. 30: 1-2
II.13	Cubical	Iron Age?	Very rare	Fig. 30: 3
II.14	Cylindrical Ribbed	Iron Age I-II?	Very rare	Fig. 30: 4-5
II.15a	Flattened Multi-Tubular Spacer	LB II – Iron Age II	Uncommon	Fig. 30: 6-7
II.15b	Elongated Spacer	MB – LB	Uncommon, see in Type V.1 Bone Beads	---
II.15c	Flattened Rectangular Spacer	Iron Age II?	Very rare	---
II.16a	Short Oblate Fluted Melon	MB – Iron Age II	Common	Fig. 30: 8
II.16b	Fluted Barrel-Shaped	LB – Iron Age II	Common	Fig. 30: 9-10
II.16c	Fluted Lentoid	LB – Iron Age II	Uncommon	Fig. 30: 11
II.16d	Fluted Bicone	LB – Iron Age II	Rare	Fig. 30: 12
II.16e	Short Oblate Spiral Melon with Collars	LB – Iron Age II?	Very rare	Fig. 30: 13
II.16f	Fluted Disk	LB – Persian	Common	Fig. 30: 14
II.17	Elongated Square – Rectangular	LB – Persian	Common	Fig. 30: 15-17
II.18	Flat Disk	EB onwards	Common	Fig. 30: 18-19
II.19	Elongated ‘Pear’-Shaped	MB – Iron Age II	Uncommon	Fig. 30: 20-22
II.20	Plano-Convex	LB onwards	Common	Fig. 30: 23
II.21	‘Reel’-Shaped	LB – Iron Age II?	Rare	Fig. 30: 24
II.22	‘Doughnut’-Shaped	EB onwards	Common	Fig. 30: 25
II.23	‘Amphora’-Shaped	Persian	Rare, see below Type III.17 Siliceous Beads.	---

II.24	Flattened Lozenge or 'Diamond'-Shaped	Persian	Uncommon	---
II.25	Rounded with 'Pinched' Waist	Late Bronze	Rare	---

Beads Type II.1 – Standard Circular (Fig. 29: 1-2)
Circular, globular beads (Beck Type I.C.1.a.).

Beads Type II.2 – Short Oblate Globular (Fig. 29: 3-7)
Globular beads, slightly oblate in general form (Beck Type I.B.1.a.).

Commonly made of semi-precious stone such as carnelian, such beads are very common throughout most of the archaeological periods. This generalized form is rounded, the stringing axis usually slightly less than the diameter.

Beads Type II.3 – Short Convex Bicone (lentoid-shaped) (Fig. 29: 8-10)
Short beads with rounded shoulders and a sharp carination (Beck Type I.B.1.e.).

Beads Type II.4 – Short Truncated Bicone (Fig. 29: 11-14)
Short biconical beads with carinated sides and truncated ends (Beck Type I.B.2.f.). Rare variants of this form may occur with pointed, non-truncated ends or with faceted sides.

Beads Type II.5 – Long Barrel (Fig. 29: 15-17)
Elongated beads with slightly bulging rounded sides (Beck Type I.D.1.b.). A variant of this form may appear with faceted sides (Fig. 29: 16).

Beads Type II.6 – Long Truncated Convex Bicone (Fig. 29: 18-21)
Elongated beads with a bulging rounded carination (Beck Type I.D.1.f).

Beads Type II.6a – Long Truncated Convex Bicone (flattened or faceted) (Fig. 29: 22)
Of similar shape to Type II.6, this bead bears two opposing sides that were ground down, producing a flattened form (Beck Type XVI.D.1.f.).

More elaborate faceted versions of the Long Truncated Convex Bicone form, even up to twelve facets, may occasionally be found during the Late Bronze and Iron Age I such as at Tell es-Saʿidiyeh (Pritchard 1980: fig. 33: 1) and Tel Beth-Shean (James 1966: fig. 109: 11, 13).

Beads Type II.7 – Long Truncated Bicone (Fig. 29: 23-25)
Elongated beads with a pronounced carination (Beck TypeI.D.2.f.).

Beads Type II.8 – Long Truncated Convex Cone (Fig. 29: 26-27)
Elongated conical beads with convex sides (Beck Type I.D.1.d.).

Beads Type II.9 – Short Cylinder (Fig. 29: 28-29)
Short, cylinder-shaped disk beads with straight sides and a wide double-cone perforation executed from both sides (Beck Type I.A.2.b.).

Though these beads have an extended chronological range, they appear to have been more common during the Early Bronze-Middle Bronze Age, probably because of their short length that facilitated the drilling of the perforation (section 2.2.2.2.).[255] All these beads bear a wide double-cone perforation.

Beads Type II.10 – Cylindrical (Fig. 29: 30-32)
Elongated straight-sided beads of cylindrical shape (Beck 1928: TypeI.D.2.b.).

Variants of this form include elongated faceted beads with hexagonal cross-section found in the early Iron Age II and the Persian period, such as at Tell el-Farʿah (N) (Chambon 1984: pl. 74: 36), Tel Michal (Herzog and Levy 1999: fig. 8: 46), or triangular cross-section, also at Tel Michal (idem: fig. 4: 13, 14, fig. 5).

Beads Type II.11 – Tabular Disk (Fig. 29: 33-36)
Tabular disk-shaped beads with the perforation running through the diameter of the disk (Beck 1928: Type XVI.C.1.a.).

[255] At Gezer, Macalister (1912b: 104) notes "a form very characteristic of the First Semitic [Period] is a small flat cylindrical disk of carnelian, counter-sunk [a double-cone perforation] on both sides." This description seems to refer to Type II.9 Short Cylinder stone beads and Macalister's observation is upheld in the examination of bead assemblages of the late 4th and early 3rd millennium.

Agate was occasionally used in the production of these beads as the multicolored variegated layers of this stone enabled the fashioning of a spot in the middle of the bead, probably intended to produce an 'eye' bead (see below Type III.12 Siliceous Beads; Fig. 32: 1-14).

Tabular disk beads appear primarily during the Iron Age II to the Persian period. A somewhat similar form, termed as 'butterfly or double-axe' bead and bearing similar technological characteristics of a perforation through the diameter of a stone disk is also found in the Early Bronze Age, such as at Tel Qashish, and in earlier millennia as well, esp. in the northern Levant (see Zuckerman 2003). All these, however, are too far removed in time to be of any real significance.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Agate (brown and white)	2	Level I	4th c.	Tufnell 1953: pl. 67: 119-120	From solar shrine. Appears as a kind of 'eye' bead. Dating according to Fantalkin and Tal 2004: 2188.
Lachish	Agate	1	Level I	4th c.	Tufnell 1953: pl. 67: 119-120	From pit associated with the Residency. Dating according to Fantalkin and Tal 2004: 2188.
Lachish	Limestone (grey)	1	Level I	4th c.	Tufnell 1953: pl. 67: 121	Dating according to Fantalkin and Tal 2004: 2188.
Kamid el-Loz	Agate, two colors	1	Grave 4	6th-4th c.	Hachmann and Penner 1999: pl. 36: 2	Appears as a kind of 'eye' bead.
Tel Miqne-Ekron	Unidentified dark stone	1	Stratum IB	7th c.	Golani forthcoming A	---
Lachish	Green Malachite	1	Tomb 106	7th-6th c.	Tufnell 1953: pl. 67: 118	Mixed tomb. Plano-convex form. Excavator's date.
Tell el-Far'ah (S)	Carnelian and Limestone?	1?	Tomb 808	8th-6th c.	Starkey 1930: Type F: 50	Appears as a kind of 'eye' bead. From a single-period burial. Dating according to Laemmel 2003: Table 5.
Azor	Carnelian	1	Stratum II	8th-7th c.	Golani 2012: fig. 6.1: 8	Dating according to D. Ben-Shlomo.
Lachish	White Chalkstone	1	Burial cave 1002	8th c.	Tufnell 1953: pl. 66: 10	With incised line decoration. Excavator's date.
Akhziv cemetery	Amber	1	Tomb T.A. 68	9th-7th c.	Mazar 2001: fig. 58: 2	---
Tel Be'er Sheva	Brown-gray Limestone	1	Stratum IV	9th c.	Golani forthcoming F	From a room.
Lachish	Green Malachite	1	Level V	10th c.	Tufnell 1953: pl. 67: 119-120	From foundations for Palace A. Excavator's date.
Tel Beth-Shean	Red Garnet?	1	Level V	11th c.	Unpublished	UM reg. no. 29-104-366
Tel Beth-Shean	Quartz	1	Level V	11th c.	Unpublished	UM reg. no. 31-50-134
Tel Miqne-Ekron	Unidentified dark stone	2	Unstratified	Uncertain	Golani forthcoming A	---

Beads Type II.12 – Scaraboid (Fig. 30: 1-2)

Beads of scaraboid shape, blank on their flat bottom (Beck Type XVI.C.4.f.b.). These beads are more common in siliceous material (see below Type III.10 Siliceous Beads; Fig. 31: 38-39).

Such beads come into use along with the appearance of the scarab, indicating that the form was held in esteem, probably because of the Egyptian belief that the sacred dung-beetle, represented by the scarab, moved the sun through the sky (Watterson 1996: 51-53).

In a study of 97 scaraboids of various materials originating from selected sites of the 8th-6th centuries in the southern Levant found that 45% were made of stone (Limmer 2007: 344, Chart 7.12).

Beads Type II.13 – Cubical (Fig. 30: 3)
Short beads in the shape of a cube (Beck Type IX.C.2.b.).

Rarely found in stone, this form is more common in siliceous materials (see below Type III.20 Siliceous Beads; Fig. 33: 4).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Lapis Lazuli	1	Tomb 1, Phase 3	9th-7th c.	Mazar 2004: fig. 22: 27	---
Tel Keisan	Alabaster	1	Ground surface	---	Briend and Humbert 1980: pl. 95: 52	---

Beads Type II.14 – Cylindrical Ribbed (Fig. 30: 4-5)
Elongated tubular beads with parallel incisions around their circumference, creating a 'beaded' effect (Beck Type XVII.A.1.a.).

A rare type, identical in form to Type III.7 Siliceous Beads (Fig. 31: 26-30), that are much more common.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel el-Farʿah (N)	Gray stone	1	Stratum VIIB	11th-10th c.	Chambon 1984: pl. 74: 35	Dating according to Chambon 1984.
Et-Taiyiba	Green stone	1	Tomb 6	12th-9th c.	Yannai 2002: fig. 12: 9	Mixed tomb.

Beads Type II.15a – Flattened Multi-Tubular Spacer (Fig. 30: 6-7)
Flat spacer beads formed by drilling two or more parallel perforations through the thin side of a flattened rectangular stone piece, then carving deep parallel grooves between these perforations in order to produce a multi-tubular form (Beck Type XVII.A.2.a.).

Though not very common, these beads are of the same form as Type III.9a Siliceous Beads (Fig. 31: 35-37), which probably imitate Type II.15a Stone Beads and are much more common. Type II.15a beads usually bear between two to four perforations, similar to their Type III.9a counterparts. Macalister (1912b: 108-109) sees these beads as being of Egyptian inspiration that were locally introduced during the 'Second Semitic Period' (Middle Bronze Age), though none of the dated examples of Type II.15a beads predate the 14th-13th centuries. Macalister may be referring to Type II.15b Elongated Spacer Beads that are usually found in bone (see below Type V.1 Bone Beads, Fig. 34: 1-2) and rarely of stone. In stone, this latter type appears primarily during the Middle to Late Bronze Age.

Though spacers are commonly considered to have functioned as beads, they could also have been used as pendants incorporated in a necklace. A reconstruction of a rich necklace of beads and pendants from Grave 45 at Assur, dated to the Iron Age II, shows spacers used in this fashion (Wartke 1999: figs. 2, 10).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Carnelian	2	Burial cave 1002	8th c.	Tufnell 1953: pl. 67: 112	Excavator's date.
Tel Beth-Shemesh (new excavations)	Carnelian	1	Level 2	8th c.	Golani forthcoming C	Partial. From Area B. One additional unpublished carnelian bead from Room 463 of older, Grant excavations (UM reg. no. 61-14-820).
Tel Be'er Sheva	Carnelian	2	Strata II-III	8th c.	Golani forthcoming F	---
Tel Be'er Sheva	Carnelian	1	Stratum V	9th c.	Golani forthcoming F	---
Tell el-Farʿah (S)	Carnelian	3	Tombs 213, 224	10th-9th c.	Starkey 1930: Type Y.: 12, 15	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Lachish	Carnelian	2	Tomb 218	10th-9th c.	Tufnell 1953: pl. 67: 112	Excavator's date. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.

Tel Masos	Carnelian	1	Stratum II	12th-11th c.	Fritz and Kempinski 1983: pl. 172: 10, 105: 10	Dating according to Mazar 2008.
Tell el-Farʽah (S)	Carnelian	1?	Tomb 104	11thc.	Starkey 1930: Type Y: 8	Dating according to Laemmel 2003: Table 1.
Tell el-Farʽah (S)	Carnelian	3	Tombs 227, 506, 527	12th-11th c.	Starkey 1930: Type Y.: 12, 15	Dating according to Laemmel 2003: 47-48, Table 2.
Lachish	Carnelian	1	Level VI	13th-12th c.	Tufnell 1958: pl. 42: 4	Excavator's date.
Tell es-Saʽidiyeh, Jordan	Carnelian	21	Tomb 101	13th c.	Pritchard 1980: fig. 19: 11-13, 15-18	Found around area of neck in rich burial, along with over 500 carnelian beads.
Timna	Carnelian	2	From sanctuary	14th-13th c.	Kertesz 1988: fig. 83: 101-102	---
Gezer	Carnelian?	1	Unclear	Unspecified	Macalister 1912b: fig. 289: 6	See also Macalister 1912c: pl. 137b: 47-48.
Tell Jemmeh	Agate?	1	Unclear	Unclear	Golani forthcoming E	---

Beads Type II.16 – Fluted Beads (Fig. 30: 8-14)

Beads of various common forms, all of whom bear an incised fluted decoration along their length. These same forms are also found in metal (see above) and more commonly, in siliceous materials as well (see below). In stone and metal, these types are not very common and have a chronological range that begins in the Late Bronze Age, though isolated examples, such as Type II.16a, also occur in the latter portion of the Middle Bronze Age.

Beads Type II.16a – Short Oblate Fluted Melon (Beck Type XXIII.B.1.a.; Fig. 30: 8)
Beads Type II.16b – Fluted Barrel-Shaped (Beck Type XXIII.D.1.f.; Fig. 30: 9-10)
Beads Type II.16c – Fluted Lentoid (Beck Type XXIII.B.1.e; Fig. 30: 11)
Beads Type II.16d – Fluted Bicone (Beck Type XXIII.C.2.e.; Fig. 30: 12)
Beads Type II.16e – Short Oblate Spiral Melon with Collars (Fig. 30: 13)
Beads Type II.16f – Fluted Disk (Fig. 30: 14)

Beads Type II.17 – Elongated Square – Rectangular (Fig. 30: 15-17)

Elongated square or rectangular-shaped beads (Beck Type X.C.2.b.) made by sawing or rubbing the stone on all six sides until the desired shape was achieved.

These beads are common and appear in a variety of materials throughout the Late Bronze and into the Persian periods.

Beads Type II.18 – Flat Disk (Fig. 30: 18-19)

Flat disk beads (Beck Type I.A.1.a.).

These beads are found throughout nearly all archaeological periods.

Beads Type II.19 – Elongated 'Pear'-Shaped (Fig. 30: 20-22)

Elongated beads that are wide and rounded at one end, the other end is tapering (Beck Type I.D.1.g.).

Though not common, such beads are found from the Middle Bronze Age and into the Iron Age II.

Beads Type II.20 – Plano-Convex (Fig. 30: 23)

Squat plano-convex beads with truncated top and a wide and flat bottom (Beck Type V.B.1.d.).

Though these objects are often identified as spindle whorls, the smaller varieties appear to have been too light for a spindle whorl, the larger examples would have been uncomfortably heavy for a bead. The fact that they are often found in tombs and are often made of semi-precious stones makes the use of small examples as beads likely. Another use for these items is that of hem-weights to make women's heavy woolen skirts or men's kilts hang well (Hughes-Brock 1999: 280).[256] These items are common locally from the Late Bronze Age onwards.

Beads Type II.21 – 'Reel' – Shaped (Fig. 30: 24)

Stone beads of various forms, all characterized by a deep groove around their circumference, making them appear as a kind of 'reel'.

[256] While minimum weights for spindle whorls have not been determined, the maximum weight is about 150 grams (Crewe 1998: 13).

This form is rare; the few published examples indicate a range from the beginning of the Late Bronze Age and well into the Iron Age II. During the Late Bronze Age, this form is also found made of siliceous materials. Though the deep groove around their circumference makes the use of these objects as earplugs or even gaming pieces possible, the fact that they were all perforated through their central axis deems their use as beads more likely.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Beth-Shemesh	Carnelian	1	Tomb 2	8^{th}-7^{th} c.	Mackenzie 1912-1913: pl. 38: 5	Biconical form.
Tell Abu Hawam	Chalkstone?	1	Stratum III	10^{th}-8^{th} c.	Hamilton 1934: pl. 34: 133	Short cylindrical form. Dating by Artzy 2008
Tell el-Farʽah (S)	Red Jasper	1	Tomb 212	10^{th}-9^{th} c.	Starkey 1930: Type P: 60	Short cylindrical form. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.

Beads Type II.22 – 'Doughnut'-Shaped (Fig. 30: 25)
Small disk-shaped beads with rounded sides producing a 'doughnut' shape (Beck Type I.A.4.f.b.). Such beads are common from the Early Bronze Age onwards.

7.5.3. Beads Type III – Siliceous Materials

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
III.1	Small Flat Disk	EB onwards	Very common	Fig. 31: 1-4
III.2	Short Oblate Globular	MB onwards	Very common	Fig. 31: 5-8
III.2a	Short Oblate Globular with Collars	LB?	Rare	---
III.3a	Short Truncated Bicone	MB – Persian	Common	Fig. 31: 9-10
III.3b	Short Truncated Convex Bicone (lentoid)	LB – Iron Age II	Common	Fig. 31: 11-12
III.3c	Short Bicone	Uncertain	Rare	---
III.4	Long Truncated Convex Bicone	EB – Persian	Very common	Fig. 31: 13-17
III.5	Long Thin Cylinder	MB onwards	Common	Fig. 31: 18-19
III.6a	Long Thick Cylinder – Glass (often with Spiral Decoration	LB onwards	Common	Fig. 31: 20-22
III.6b	Long Thick Cylinder – Faience	EB onwards	Common	Fig. 31: 23-25
III.7	Segmented	MB II onwards	Common	Fig. 31: 26-30
III.8	Granulated Bead	LB III – Iron Age II	Common	Fig. 31: 31-34
III.9a	Flattened Multi-Tubular Spacer	MB – Persian	Common	Fig. 31: 35-37
III.9b	Elongated Spacer	LB	Very rare, similar to Type V.1 Bone Beads.	---
III.10	Scaraboid	MB II – Roman	Common	Fig. 31: 38-39
III.11	Lotus	Late Iron Age II – Persian	Rare	Fig. 31: 40-41
III.12a	Standard Tabular 'Eye'	MB? – early Iron Age II	Common	Fig. 32: 1-3
III.12b	Triangular Horned Stratified 'Eye'	Iron Age I-II	Common	Fig. 32: 4-7
III.12c	Barrel-Shaped 'Eye'	Iron Age I?	Rare	---
III.12d	Short Oblate Globular 'Eye'	LB II – Iron Age II	Common	Fig. 32: 8-14
III.12e	Plano-Convex Circular 'Eye'	Iron Age	Very rare	---
III.13	Tabular Disk	LB – Iron Age II	Common	Fig. 32: 15-17
III.14	Short Hexagonal or Pentagonal	Uncertain	Rare	Fig. 32: 18
III.15	Truncated Conical	LB – Persian	Uncommon	Fig. 32: 19-20
III.16a	Short Oblate Fluted 'Melon'	MB II – Iron Age II	Very common	Fig. 32: 21-23
III.16a1	Short Oblate Fluted 'Melon' with Collars	LB – Iron Age II	Common	Fig. 32: 24-27
III.16b	Elongated Fluted 'Melon'	LB – Persian	Common	Fig. 32: 28-29

III.16c	Fluted Cylinder	LB – Iron Age II	Common	Fig. 32: 30-31
III.16d	Fluted Round Plano-Convex	LB – Iron Age II	Common	Fig. 32: 32
III.16e	Fluted Disk	LB – Iron Age II	Common	Fig. 32: 33-34
III.16e1	Fluted Disk with Collars	LB – Iron Age II	Common	Fig. 32: 35
III.16f	Fluted Bicone	LB – Iron Age II	Rare	Fig. 32: 36
III.16g	Fluted Truncated Cone	LB?	Rare	---
III.17	Amphora-Shaped	Late Iron Age II – Persian	Rare, Phoenician type?	Fig. 33: 1
III.18	Thick Cylinder with Hatched Decoration	LB Age	Rare	---
III.19	Cubical	LB – Iron Age II-III	Rare	Fig. 33: 2-3
III.20	Rectangular	Iron Age I – Persian	Rare	Fig. 33: 4
III.21	'Pear'-Shaped	MB(?)-Persian	Rare	Fig. 33: 5-6
III.22a	Ribbed Bead – Long Convex Bicone	MB – LB	Very rare	---
III.22b	Ribbed Bead – Cylindrical Spiral	MB II	Very rare	---
III.23	'Spoked Wheel'-Shaped	LB II	Rare, Mycenean type	---
III.24	Elongated Triangular	Iron Age I-II?	Rare	Fig. 33: 7-8
III.25	Flat Lozenge or 'Diamond'-Shaped	Persian	Uncommon	---
III.26	'Reel' or 'Spool'-Shaped	LB?	Rare	---
III.27	Zoomorphic	Iron Age II?	Rare	See in Spaer 2012: fig. 9.4: 11

Beads Type III.1 – Small Flat Disk (Fig. 31: 1-4)
Small flat disk beads (Beck Type I.A.2.b) made by cutting slices off of a tubular bead of faience or Egyptian Blue formed around a thin wire or stick when still in a plastic state and then firing them. Such beads are often mass-produced and may be strung in the hundreds to form a necklace or a more complex beadwork decoration.[257] They are common in faience of all colors and are usually unglazed.

Some examples were apparently made in a mold and then fired. In such cases, the edges of the bead may retain traces of a thin lip; probably surplus material that extruded from within the mold.

These beads occur from the EB onwards and are very common.

Beads Type III.2 – Short Oblate Globular (Fig. 31: 5-8)
Beads of round, slightly oblate form and made of faience, Egyptian Blue (rare) or glass. Though many of these beads are somewhat asymmetrical or squat, the general tendency is towards a globular shape (Beck Type I.B.1.a.). Faience examples were made by shaping the bead in a plastic state around a stick or wire and then firing or by impressing the material within a mold. Most of the glass beads were made using a 'trail' technique of winding a molten glass trail around a stick or wire, while others were found with an impressed 'crumb' decoration.

This form is very common from the Middle Bronze Age onwards. A rare variant of the short oblate globular form with molded collars at both ends of the perforation is also found in faience and glass, such as at Lachish (Tufnell 1953: pls. 66: 80, 67: 109), dated to the Iron Age II.

Beads Type III.3a – Short Truncated Bicone (Fig. 31: 9-10)
Short biconical beads with carinated sides and truncated at both ends (Beck Type I.C.1.f.). These beads were made by molding faience around a stick or wire, or by impressing within a mold.

This type is common from the Middle Bronze Age onwards. Rare variants include forms with convex sides and a general lentoid shape (Type III.3b; Beck Type I.B.1.e) that are uncommon during the Iron Age II, appearing primarily during the Late Bronze to Iron Age I (Fig. 31: 11-12), and of biconical shape without truncated ends (Type III.3c; Beck Type I.C.1.e.).

Beads Type III.4 – Long Truncated Convex Bicone (Fig. 31: 13-17)
Elongated beads with pronounced rounded sides (Beck Type I.D.1.f.) made by molding faience or Egyptian Blue around a stick or wire or by impressing within a mold. Examples in glass are free-formed on a rod and frequently feature trail decoration, a common technique already during the Late Bronze Age.

This type is extremely common, found in use from the EB onwards. Variants of this type include forms that are flattened, faceted or have molded collars at both ends (see Tufnell 1953: pls. 67: 100, 107-108, 126).

[257] For a discussion on how such beads were employed in elaborate beadwork compositions see Bosse-Griffiths 1975.

Beads Type III.5 –Long Thin Cylinder (Fig. 31: 18-19)

Thin, tubular beads (Beck Type I.D.2.b.) made by molding faience paste around a stick or wire and then firing.

This form is common from the Middle Bronze Age onwards.

Beads Type III.6a – Long Thick Cylinder – Glass (Fig. 31: 20-22)

Cylindrical glass beads made by molding molten glass around a wire core, then winding and impressing drawn glass strands in spiral fashion into the body of the bead (Beck Type XLVII.A.7.). Many such beads bear a 'scalloped' decoration made by 'pulling' the flattened glass trails while the bead was still in a molten state (section 2.5.2.2.). Weathering often causes the glass strands to become detached from the body of the bead, producing a 'ribbed' appearance (see Fig. 31: 21).

These glass beads become common with the major onset of glass production during the Late Bronze Age, continuing into the Persian period as well.

Beads Type III.6b – Long Thick Cylinder – Faience (Fig. 31: 23-25)

Of the same form as Type III.6a, made in faience or Egyptian Blue (Beck Type I.D.2.b.).

In contrast to Type III.6a, these are exclusively monochrome beads. This type is common from the EB.

Beads Type III.7 – Segmented (Fig. 31: 26-30)

Mold-made or hand-sculpted tubular beads made in similar fashion to Type III.5 Siliceous Beads (Fig. 31: 18-19), with a grooved band decoration that divides the bead into segments (Beck Type XVII.A.1.a.). This feature may have been produced by rolling a faience tube when still moist under a blade to achieve the grooves.

These beads are found in faience or Egyptian Blue, rarely in glass. The same form occurs in stone (see above Type II.14 Stone Bead; Fig. 30: 4-5) and in metal (Type I.13 Metal Beads; Fig. 28: 28). Use of siliceous material for this form is the most common and is found already during the Middle Bronze Age.

Beads Type III.8 – Granulated Bead (Fig. 31: 31-34)

Also termed 'Grape Cluster' or 'Pineapple' beads (Beck 1928: 27, Type XXV.A.5.), these beads feature a relief decoration of small squares or granules around the circumference of the bead. These beads may be mold-made or hand-tooled.

Commonly made in faience or Egyptian Blue, this distinctive form appears at the end of the Late Bronze Age, continuing into the Iron Age I-II, but apparently passes out of fashion during the late Iron Age II. No definite examples are known after the 8^{th}-7^{th} centuries. Possible antecedents of this distinctive form are known from the beginning of the Late Bronze Age and were fashioned by several rings of faience granules stacked one atop the other and fused together, such as an example from Tel Beth-Shean (see below).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Beth-Shean	Faience	2	Level IV?	8^{th} -7^{th} c.	James 1966: fig. 117: 24	Mixed context. Found in a jewelry hoard. Dating according to James 1966.
Tell Jemmeh	Faience	1	Unclear	8^{th} c.	Golani forthcoming E	---
Tel Miqne-Ekron	Faience	1	Stratum IIA	8^{th} c.	Golani 1996: 84-85, fig. 18: 8	---
Lachish	Faience	3	Burial cave 1002	8^{th} c.	Tufnell 1953: pl. 66: 41	Excavator's date.
Lachish	Faience	11	Tomb 120	9^{th} c.	Tufnell 1953: pl. 38: 2	Mixed tomb. Excavator's date.
Megiddo	Faience	2	Stratum IV	9^{th}-8^{th} c.	Lamon and Shipton 1939: pl. 91: 41, 47	Dating according to Mazar 2008.
Tel Beth-Shemesh (new excavations)	Faience	1	Level 3	10^{th} -8^{th} c.	Golani forthcoming C	---
Lachish	Faience	23	Tombs 218, 224, 107, 116	10^{th}-9^{th} c.	Tufnell 1953: pl. 66: 43	Excavator's date.
Lachish	Egyptian Blue	1	Tomb 218	10^{th}-9^{th} c.	Tufnell 1953: pl. 66: 42	Excavator's date.

Megiddo	Faience	4	Stratum V	10th-9th c.	Lamon and Shipton 1939: pls. 91: 40, 55; 217	Dating according to Mazar 2008.
Tel Beth-Shemesh	Faience	13	Tomb 1	10th c.	Mackenzie 1912-1913: pl. 32a, b, c	Excavator's date.
Tell el-Farʿah (S)	Faience	3	Tomb 119	11th c.	Petrie 1930: pl. 36 (lower right)	From a single-period burial. Dating according to Laemmel 2003: Table 1.
el-Jib (Gibeon)	Faience	4	Tomb 3	11th-10th c.	Dajani 1953: pl. 10: 51; Pritchard 1963: fig. 73 (bottom left)	UM reg. no. 62-30-191.
Tell el-Farʿah (S)	Faience	1	Tomb 133	11th-10th c.	Petrie 1930: pl. 29: 266	Dating according to Laemmel 2003: Table 1.
Tel Beth-Shean	Faience	4	Level V	11th c.	Unpublished	UM reg. nos. 29-104-290, 29-104-307, 31-50-156
Tel Beth-Shean	Faience	1	Level VII	13th c.	Unpublished	UM reg. no. 29-104-464
Tell es-Saʿidiyeh	Faience	10	Burial	13th c.	Pritchard 1980: fig. 19: 26, 42; 56: 1	Found around area of neck.
Tel Beth-Shean	Faience	1	Level IX	14th c.	Unpublished	UM reg. no. 29-104-668.
Tell Jemmeh	Faience	1	Unclear	Unclear	Golani forthcoming E	Possibly originating from earlier Iron Age II strata.
Tell en-Naṣbeh	Faience?	11	Unclear	Unclear	McCown 1947: pl. 107: 1	---

Beads Type III.9a – Flattened Multi-Tubular Spacer (Fig. 31: 35-37)
Flat quadrangular spacer beads (also termed ribbed spacer beads) made of faience, Egyptian Blue or glass, formed by 3-4 long thin cylinder beads (see Type III.5 Siliceous Beads; Fig. 31: 18-19) fused parallel to each other (Beck Type XVII.A.2.a.). Another method is by use of an open two-part mold, in which case one side of the bead is flat, the other ribbed (hence the term ribbed spacer). Most examples of this type contain 2-7 parallel 'ribs' or 'tubes'.

Such beads are normally referred to as 'spacers' as they have more than one perforation. However, as these beads are often found together, they may have been a recurring component on a beadwork necklace, thus also being used as 'ordinary' beads rather than for spacing strands of beads. At Megiddo, for example, Tomb 2010 of the Late Bronze Age contained ten identical ribbed spacers "composing an entire necklace" (Loud 1948: pl. 211: 46, fig. 343).

Locally, these siliceous beads are found as early as the 16th century and the same form is also found in metal (Type I.11 Metal Beads; Fig. 28: 27) and in stone (Type II.15a Stone Beads; Fig. 30: 7-8).[258] They are common during the Late Bronze Age, continuing through the Iron Age I-II and into the Persian period (Spaer 1984; Taniichi 1992). A rare variant of the Late Bronze Age found at Tell Abu Hawam features six elongated melon beads (see below Type III.16c Siliceous Beads; Fig. 32: 30-31) arranged side by side to form a multi-tubular spacer (Hamilton 1934: pl. 35: 419).

Beads Type III.10 – Scaraboid (Fig. 31: 38-39)
Mold-made blank scaraboid beads (Beck Type XXXVI.D.4.f.b.) made of faience, Egyptian Blue and glass with the stringing hole pierced through their central axis.

Scaraboids are probably the most numerous and long lived of all the Egyptian-style amulets and in simplified blank form, were often used as beads (see Petrie 1914: 23-25; Andrews 1994: 50). Pierced blank scarabs have been employed as beads ever since the common appearance of scarabs in the 2nd millennium, suggesting that the form itself was of symbolic importance even when no seal inscription is found on the underside. Though the scarab depicts the lowly dung beetle, they were emulated as representing life, creation and resurrection (Watterson 1996: 51-53). Most often made in steatite and faience, scaraboids are also made from other types of stone and glass. A limited study of 97 scaraboids of various materials originating from selected sites of the 8th-6th centuries in the southern Levant revealed that 24% were made of siliceous materials (Limmer 2007: 344).

Beads Type III.11 – Lotus (Fig. 31: 40-41)
Mold-made beads in the form of a lotus flower with a stringing hole through the central axis of the petal (Beck Type XXVI.B.1.e.).

[258] For an inclusive account of this bead form, including its possible Mesopotamian antecedents from the 2nd millennium, see Spaer 1984; 2001: 58-60.

The lotus flower is a well-known Egyptian motif that is often found in ancient jewelry (e.g., see above Type III.1 Earrings; Fig. 12: 1). Use of this motif for beads in faience, glass or Egyptian Blue is a Phoenician-Punic development (Spaer 2001: 64) distinctive to the late Iron Age II and Persian periods only (see Herrmann 2006: 233, Cat. Nos. 466-468) that is found in the southern Levant and throughout the areas affected by Phoenician colonization (see Marshall 1911: 156, 157, nos. 1545, 1547, pls. 24-25; Gauckler 1915: pl. 168; Vercoutter 1945: no. 921a, pl. 25; Uberti 1975: E15, pl. 44).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Kamid el-Loz	Glass?	1	Grave 18	5^{th}-4^{th} c.	Poppa 1978: pl. 13: 8	---
Tell el-Ḥesi	Glass	1	Stratum V	5^{th}-4^{th} c.	Bennet and Blakely 1989: 276	---
ʿAtlit	Faience?	1	Tomb 24	5^{th}-4^{th} c.	Johns 1933: 96, pl. 23: 876	Strung on earring as a pendant. Excavator's date.
Tel Shor	Glass	1	Burial	6^{th}-4^{th} c.	Golani forthcoming G	From single-period individual tomb.
Akhziv cemetery	Faience	1	Tomb ZR XIII	7^{th}-5^{th} c.	Dayagi-Mendels 2002: fig. 4.11: 8	Dating according to Dayagi-Mendels.
Akhziv cemetery	Glass	6	Tomb ZR X	7^{th}-6^{th} c.	Dayagi-Mendels 2002: fig. 4.8: 22	Dating according to Dayagi-Mendels.
Tel Miqne-Ekron	Egyptian Blue	1	Stratum IB	7^{th} c.	Golani 1996a: 86, fig. 18: 11	---
Tel Beth-Shemesh	Blue Glass	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-2219

Beads Type III.12 – 'Eye' Beads

Glass beads with various circular designs symbolizing 'eyes' are common throughout the Mediterranean since the latter half of the 2nd millennium where they have been found in a variety of styles, colors and techniques (see Eisen 1916; Spaer 1985). Eye beads were common in Egypt during the Late Bronze Age and appear in Mesopotamia and the southern Levant at the same time, but the fashions adopted locally appear to be closer to those of Mesopotamia than to Egypt (Spaer 1985).

During the second and well into the 1st millennium, the 'eye' decoration on glass beads is usually made by the 'stratified' technique, whereby successively smaller and concentric globs, or 'spots', are laid upon or impressed into a glass bead, the 'ring' around the spot of the eye being formed by the underlying matrix (see section 2.5.2.2.). These beads are generally flat or plano-convex in shape, bearing only one eye (see below Type III.12a; Fig. 32: 1-3). In a later variation of this technique that first appears in the Iron Age II, the spot of the eye is outlined by contrasting glass trail rings impressed into the bead (see below Type III.12b). Glass beads with multiple eyes using both techniques occur primarily during the Late Iron Age II and Persian periods, when the technique of making ever-smaller eyes on one bead (crowding) became more developed. The stratified eye technique was common throughout the eastern Mediterranean until it was replaced by the 'cut-cane' technique in the 3rd century.[259]

The symbol of the eye has always played a prominent role in superstitious belief and practice.[260] The symbol, even if rendered in schematic form on a bead, is commonly regarded as protective, guarding against the 'evil eye' (see Elseworthy 1895; Eisen 1916; Ulmer 1994; Spaer 2001: 77). The human eye and the varied expressive nuances that it conveys, such as reflecting envy and jealousy, is commonly believed capable of inflicting harm and therefore has to be guarded against, as reflected in the Old Testament when Saul's jealousy turns him against David "and Saul eyed David from that day forward" (I Samuel 18: 9). Protection against the evil eye or its projected concept can take various forms in diverse cultures and periods. Throughout the Middle East, the *'hamsa'*, or an open hand and palm within which is a depiction of an eye, is often used today to ward off the evil eye. The widespread use of the 'eye' motif, entrusted with supernatural protective powers as a counter-charm throughout the Near East is well-established, though this motif is also appreciated for its decorative value as well. As noted by Spaer (2001: 77) "any symbol in use for a long time is likely to become part of convention and tradition and lose some of its magical applications in the process".

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[259] While the bulk of the Mediterranean stratified eye beads appear during the Persian period, similar eye beads in other regions appear slightly later. New fashions and techniques appear to frequently have had their origins in the eastern Mediterranean, later reaching other regions where they stay in fashion longer than in the area of their inception (Spaer 1985: 3).

[260] The eye motif is not limited only to glass, however, and may also be seen in the ring and dot motif commonly found executed on bone/ivory, shell and stone items as early as the Middle Bronze Age.

The simplicity and expressiveness of the symbol, most often executed in glass, lends itself to many variations. Beck classifies eye beads as a separate group (Group XLVI; Beck 1928: 41-46, 62-65), a distinction also followed in the present typology.

The specific types found during the Iron Age II are described below.

Beads Type III.12a – Standard Tabular 'Eye' (Fig. 32: 1-3)

Tabular-shaped glass beads perforated through their circular diameter (Beck Type XVI.C.1.a.) creating a plano-convex form with a dark spot in the middle surrounded by one or more concentric bands. The eye decoration is usually executed by a stratified technique. The colors of the glass usually run from beige-brown to dark blue, offset by whitish or silvery blue circles.

Such beads are found at Nuzi in Mesopotamia, dated to the Late Bronze Age and are even more common in Egypt, where they are found at several production centers dated to the 14th-13th centuries (see Eisen 1916; Spaer 2001: 78). This form appears locally during the Iron Age I and continues into the early Iron Age II. A singular example from Tomb 570 at Tell el-Farʿah (S) is associated with the Middle Bronze Age II and may be the earliest example of this bead type, even predating Mesopotamian and Egyptian examples.

Type III.12a Siliceous Beads are similar in shape to Type II.11 Tabular Disk Stone Beads (Fig. 29: 32-36). Some of the Type II.11 Stone Beads, made of banded agate, were fashioned in such a way that the multicolored stone layers presented a circular dot in the center of the bead, depicting an 'eye'. This later variant of the Type II.11 Stone Bead appears only in the Persian period, when Type III.12a Siliceous Beads are already absent.

A rare variant of this type from Tomb 225 at Tell el-Farʿah (S) and dated to the 10th-8th centuries, features two such beads connected side-by-side to form a spacer bead (Starkey 1930: Type Y: 35).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Glass	1	Tomb 224	9th c.	Tufnell 1953: pl. 67: 90	Mixed tomb. Excavator's date.
Tell el-Farʿah (S)	Glass	1?	Tomb 201	10th-8th c.	Starkey 1930: Type S: 62	Black and white glass. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Megiddo	Glass	1	Stratum V	10th-9th c.	Lamon and Shipton 1939: pl. 92: 50	Dating according to Mazar 2008.
Tell el-Farʿah (S)	Glass	1?	Tomb 534	11th-10th c.	Starkey 1930: Type S: 55	Dating according to Laemmel 2003: Table 2.
Tel Ashdod	Glass	1	Stratum XIb	11th c.	Golani and Ben-Shlomo 2005: fig. 4.2: 21	Mistakenly published as a Type III.13 bead.
Tel Beth-Shean	Glass	3	Level V	11th c.	Unpublished	UM reg. nos. 25-104-299, 29-104-366, 31-50-151
Tel Beth-Shean	Glass	1	Level VI	12th c.	James 1966: fig. 101: 12	UM reg. no. 29-104-561
Tel Miqne-Ekron	Glass	1	Stratum VII	12th c.	Golani 1996a: 86-87, fig. 18: 12	---
Tell el-Farʿah (S)	Glass	1?	Tomb 643	12th c.	Starkey 1930: Type S: 55	From a single-period burial. Dating according to Laemmel 2003: Table 3.
Tell el-Farʿah (S)	Glass	1?	Tomb 570	17th-16th c.	Starkey 1930: Type S: 55	Possibly intrusive or the earliest local form of this type. Dating according to Laemmel 2003: Table 2.
Tel Beth-Shemesh	Glass	1	Room 415	Unclear	Unpublished	UM reg. no. 61-14-859

Beads Type III.12b – Triangular Horned Stratified 'Eye' (Fig. 32: 4-7)

Large eye beads formed by the addition of three protruding eyes around the circumference of a large basic bead of squat globular form, thus creating a triangular shape (see Beck 1928: 44, 64, fig. 61, Type XLVI.A.7.e.1.). The 'eyes' consist of glass blobs added on to the bead, usually in the same color. Subsequently, the 'eye' rings were added on as trails that were wound around the seam between the basic bead and the added glass blobs (see section 2.5.2.2.). Local examples are usually of brown, yellow or green color, usually darker on the inside. The eyes are usually of the same color, with the eye rings in opaque white or yellow.

Such beads are common in the southern Levant and the eastern Mediterranean throughout the Iron Age II (see Spaer 2001: 79 for an extensive list of foreign examples). They never appeared as an Egyptian fashion, though the Egyptians were quite adept at producing stratified eye beads (Spaer 1985: 1-2). Because its local appearance coincides with the period of significant Assyrian influence in the southern Levant, Reich and Brandl (1985: 49) have proposed that this bead type is of Assyrian inspiration. A few examples are known from sites from northern Syria, such as at Tell el-Fakheriyeh (McEwan et al. 1958: 51, pl. 50: 25) and at Zinjirli (Andrae 1943: fig. 191: S.3008) dated to the late Iron Age II. However, this form has not been found in the early Iron Age II within Assyria itself. It has been found at Ephesos in Asia Minor (Hogarth 1908: 203, pl. 45: 7-9, 12-14, 16, 18), Lindos[261] in the Aegean (Blinkenberg 1931: 93-94, pl. 10: 151), Lefkandi in Euobea (Popham, Touloupa and Sackett 1982: pl. 32: e; Nightingale 2007: pl. CVId: 1-2) and in Italy (Beck 1928: figs. 34b, 61) where it also appears in the late Iron Age II. Most of these sites are all well outside the sphere of the Assyrian empire. As most examples of this bead type are known from outside Assyria during the Iron Age II, the eastern origin of this bead form is doubtful and it appears more probable to see this distinctive form as local or western and not Assyrian in origin.

The chronological association of most of these beads indicates that they are typical of the Iron Age II. Spaer has dated them to the 9th-7th centuries (2001: 79-80), but a substantial number of earlier examples appear to push their initial appearance back into the 11th century. These beads are also found in the late Iron Age II and appear to continue into the Persian period as well. A Persian period variant of this form with four projections is known from Kamid el-Loz (Hachmann and Penner 1999: pl. 36: 5).

A unique variant of this form, made of obsidian, has recently been published from Hazor.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Megiddo	Glass	3	Stratum II	7th c.	Lamon and Shipton 1939: pl. 92: 10, 34, 40	Excavator's date.
Tel Miqne-Ekron	Glass	1	Stratum IB	7th c.	Golani 1996a: 87, fig. 18: 3	Brown and off-white.
Akhziv cemetery	Glass	2	Tomb ZR XIII	7th-5th c.	Dayagi-Mendels 2002: fig. 4.11: 32	Brown glass. Dating according to Dayagi-Mendels.
Jerusalem (City of David)	Glass	2	Stratum 10B	7th-6th c.	Ariel 1990: 157-158, fig. 31: GL44, GL45	---
Megiddo	Glass	3	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 92: 23, 34, 40	Excavator's date.
Hazor	Obsidian Glass	1	Stratum V	8th c.	Spaer 2012: fig. 9.2: 5	Unique variant.
Tel Beth-Shean	Glass	1	Upper Level V	10th-9th c.	Spaer 2001: 79	---
Akhziv cemetery	Glass	1	Tomb Z XI	10th-8th c.	Dayagi-Mendels 2002: fig. 3.10: 31	Dark blue glass. Fragment. Dating according to Dayagi-Mendels.
Tell Abu Hawam	Glass	1	Stratum III	10th-8th c.	Hamilton 1934: pl. 34: 135	Unclear color. Possibly intrusive from Persian level. Dating by Artzy 2008.
Tell el-Farʿah (S)	Glass	2	Tombs 206, 237	10th-9th c.	Starkey 1930: Bead Type P: 17.	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Akhziv cemetery	Glass	1	Tomb ZR XXXIX	10th-9th c.	Dayagi Mendels 2002: fig. 4.28: 15	Dark glass. Dating according to Dayagi-Mendels.
Megiddo	Glass	1	Stratum VA	10th-9th c.	Loud 1948: pl. 218: 135	Dating according to Mazar 2008.
Tell Jemmeh	Glass	1	GV 185	10th c.?	Petrie 1928: pl. 22: top right	Unclear context.
Nazareth	Glass	1	Cave tomb	11th c.	Vitto 2001: fig. 4: 2	Black glass. From disturbed tomb.
Tel Beth-Shean	Glass	1	Lower Level V	12th-11th c.	Unpublished	UM reg. no. 31-50-151

[261] A possible workshop for the manufacture of this bead type on the Greek island of Lindos has produced 133 such beads dating to the late Iron Age (Blinkenberg 1931: 93-94).

Anthedon	Glass		Unclear	Unclear	Petrie and Ellis 1937: pl. 30: 13	---
Gezer	Glass	1	'Third Semitic Period'	Unclear	Macalister 1912b: 109; 1912c: pl. 137b: 50	Excavator's dating. Probably 4th Semitic period (Iron Age II?)
Tell el-Kheleife	Glass	1	Unclear	Unclear	Unpublished	IAA reg. no. 19.685
Tell en-Naṣbeh	Glass	1	Unclear	Unclear	McCown 1947: 266-268, fig. 72	---
Samaria	Glass	1	Unclear	Unclear	Crowfoot, Crowfoot and Kenyon 1957: 394: fig. 92: 9	---

Beads Type III.12d – Short Oblate Circular 'Eye' (Fig. 32: 8-14)
Short oblate to globular beads with circular 'eyes' arranged around their circumference (Beck Type XLVII.C.1.a.).

These beads begin locally during the LB II[262] and are common throughout the Iron Age II. Most are made by impressing a glob of glass into the bead. Others have added impressed glass trails around the spot. At the end of the Iron Age II and primarily into the Persian period, intensive use of the 'stratified eye' or 'layered' technique is used for production of 'crowded' eye beads that have a much larger number of eyes (Spaer 2001: 81).

Beads Type III.13 – Tabular Disk (Fig. 32: 15-17)
Disk-shaped beads perforated through their diameter (Beck Type XVI.C.1.a.). Glass beads of this form were probably made as an oblate globular shape on a rod then quashed to create the tabular form. Some of the glass examples may bear in impressed trail decoration. Faience examples (less common) were hand or mold-formed.

This type is common throughout the Late Bronze Age and the Iron Age I-II.

Beads Type III.14 – Short Hexagonal or Pentagonal (Fig. 32: 18)
Short cylindrical beads with faceted sides forming a hexagonal (Beck Type XIII.C.2.b.) or pentagonal (Beck Type XII.C.1.a.) cross-section.

This is a rare form that may be found in glass, faience and Egyptian Blue.

Beads Type III.15 – Truncated Conical (Fig. 32: 19-20)
Short beads of plano-convex form (Beck Type I.B.1.c.).

Though not common, these beads are found in glass and faience from the Late Bronze through the Persian period.

Beads Type III.16 – Fluted Beads (Fig. 32: 21-36)
Beads of various common forms, all bearing a fluted decoration along their length. The wide and rounded beads are also termed 'melon' or 'gadrooned' beads, many of these forms are also found in metal and stone (see above), though they are common in siliceous materials as well, chief among them faience, then glass, and to a lesser degree, Egyptian Blue.

Fluted 'melon' beads (Type III.16a) first appear during the Middle Bronze Age II when the use of faience becomes common in the southern Levant. However, most fluted bead varieties begin during the Late Bronze, where they are common among bead assemblages. These forms often continue through the Iron Age I and into the Iron Age II, although in lesser amounts, and by the Persian period, most bead types with fluted decoration cease to be found. Faience and Egyptian Blue varieties of these beads were probably formed in a mold or may have been hand-formed; those made of glass were probably tooled when still in a viscous state (section 2.5.2.2.) or were also mold-formed.

Beads Type III.16a – Short Oblate Fluted 'Melon' (Fig. 32: 21-23)
The most common form of this group (Beck Type XXIII.B.1.a) appears during the Middle Bronze Age II through the end of the Iron Age II. Most examples are made of faience, fewer of glass or Egyptian Blue. The form is also found in metal (Type I.5a Metal Bead;s Fig. 28: 11-14) and stone (Type II.16 Stone Beads; Fig. 30: 8-13).

[262] A singular bead from Tomb 39 at el-Jib (biblical Gibeon), dated to the Middle Bronze Age II period (Pritchard 1963: fig. 72: 17) of "buff paste with green and white decorated circles", may be the earliest eye bead known or maybe just intrusive into this tomb.

Beads Type III.16a1 – Short Oblate Fluted 'Melon' with Collars (Fig. 32: 24-27)
A common variant of Type III.16a features a short oblate form with molded collars at either end of the perforation. This type appears in faience and rarely in glass throughout the Late Bronze Age and into the Iron Age II. The same form is also found in stone (Type II.16e Stone Beads; Fig. 30: 13) and in metal (Type I.5a Metal Beads; Fig. 28: 12, 14).

Beads Type III.16b – Elongated Fluted 'Melon' (Fig. 32: 28-29)
Elongated, long truncated convex bicone-shaped beads with fluted decoration (Beck Type XXIII.D.1.b.) made of faience. This form begins during the Late Bronze Age and ends in the beginning of the Persian period. The same form is also found in stone (Type II.16 Stone Beads; Fig. 23: 11).

Beads Type III.16c – Fluted Cylinder (Fig. 32: 30-31)
Cylindrical beads with a fluted decoration (Beck Type XXIII.D.2.b.). Made of faience or Egyptian Blue, this form is found throughout the Late Bronze Age until the end of the Iron Age II.

Beads Type III.16d – Fluted Round Plano-Convex (Fig. 32: 32)
Plano convex beads with a fluted decoration (Beck Type XXIII.B.1.d.). Made of faience, Egyptian Blue and glass, these beads begin during the Late Bronze and are found until the end of the Iron Age II.

Beads Type III.16e– Fluted Disk (Fig. 32: 33-34)
Flat disk-shaped beads resembling a cogwheel with notches all around their edges (Beck Type XXIII.A.1.b.). Made of faience, these beads are found primarily during the Late Bronze age and continue until the end of the Iron Age II.

Beads Type III.16e1 – Fluted Disk with Collars (Fig. 32: 35)
A variant of Type III.16e with a molded collar around each perforation. Made of faience and Egyptian Blue, this type begins during the Late Bronze Age and is found until the end of the Iron Age II.

Beads Type III.16f – Fluted Bicone (Fig. 32: 36)
Bicone-shaped fluted beads (Beck Type XXIII.D.1.e.). A rare form, this type is found in faience and appears during the Late Bronze Age, continuing into the Iron Age I but rarely into the Iron Age II. The same form is sometimes found in stone (Type II.16d Stone Beads; Fig. 30: 12).

Beads Type III.17 – Amphora-Shaped (Fig. 33: 1)
Beads in the shape of a typical amphora of the Late Iron Age II – Persian period with the perforation through their middle.

Though uncommon, these beads are very similar to glass pendants of nearly identical form, with their perforation at one end instead of the middle (Spaer 2001: nos. 288-289). According to Spaer, these pendants are common throughout the eastern Mediterranean during the 7th-5th centuries, where they are found primarily in Phoenician contexts (2001: 163). This date is in agreement with the Type I.12 Amphora-Shaped Metal Pendants, also found at sites considered as 'Phoenician' so that the beads and the pendants appear to be two variants of the same form. The same form is also found in stone during the Persian period, as at Kamid el-Loz (see Hachmann and Penner 1999: pl. 36: 14).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
ʿAtlit	Glass?	1	Tomb 21b	5th-4th c.	Johns 1938: 145, fig. 5: 6a, pl. 25: 642	Excavator's date.
Tell el-Farʿah (S)	Glass	2	Tombs 749, 758	7th-4th c.	Starkey 1930: Type X: 62	Dating by Laemmel 2003: Table 4.
Akhziv cemetery	Glass	1	Tomb ZR VI	8th-6th c.	Dayagi-Mendels 2001: fig. 4.5: 10	Partial. Dating according to Dayagi-Mendels.
Lachish	Glass	1	Burial cave 4005	10th-6th c.	Tufnell 1953: pl. 67: 142	Excavator's date.

Beads Type III.19 – Cubical (Fig. 33: 2-3)
Beads of cubical form (Beck Type IX.C.2.b) made of faience, Egyptian Blue or glass, with a perforation through the center.

This is an uncommon form, at present known primarily from Iron Age II contexts, though isolated examples may also originate during the Late Bronze Age II period.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Akhziv cemetery	Faience	1	Tomb ZR XIII	7th-5th c.	Dayagi Mendels 2001: fig. 4.11: 20	Dating according to Dayagi-Mendels.
Akhziv cemetery	Faience	1	Tomb ZR XXVIII	7th-5th c.	Dayagi Mendels 2001: fig. 4.20: 12	Dating according to Dayagi-Mendels.
Tel Ash-kelon	Faience	1	Grid 50, Phase 7	7th c.	Park 2011: fig. 15.2: 40723	---
Lachish	Glass	1	Burial cave 4005	10th-6th c.	Tufnell 1953: pl. 66: 9	Clear glass. Excavator's date.
Mitzpeh Afeq	Egyptian Blue	1	Ground sur-face	Unclear	Golani forthcoming B	---
Tel Beth-Shean	Glass	1	Level VII	13th c.	Unpublished	UM reg. no. 29-104-465
Tel Beth-Shemesh	Glass	1	Room 337	Unclear	Unpublished	UM reg. no. 61-14-2199
Tel Beth-Shemesh	Faience	1	Unclear Room 306	Unclear	Unpublished	UM reg. no. 61-14-852

Beads III.20 – Rectangular (Fig. 33: 4)

Elongated rectangular-shaped beads (Beck Type X.C.2.b.).

These simple forms may have been made in a mold or shaped by hand, then fired. Though generally uncommon, these beads are so far known primarily from the end of the Iron Age I and through the Persian periods. A singular example from Tomb 116 at Lachish features two incised dot and circle decorations on each side. This decorative feature is usually found in bone beads, pendants and luxury stone objects, rarely on faience items. An example from Tell Abu-Hawam features a decoration of an outstretched striding figure holding a stick. On the other side is a depiction of striding horse or donkey and seven small dots or circles above.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Shor	Faience and Glass	2	Burial	6th-4th c.	Golani forthcoming G	From single-period individual tomb.
Lachish	Faience?	1	Tomb 116	9th-7th c.	Tufnell 1953: pl. 66: 36	Mixed tomb. Excavator's date.
Akhziv (er-Ras Cemetery)	Faience	1	Tomb ZR XXXVI	10th-7th c.	Dayagi-Mendels 2002: fig. 4.27: 100	Dating according to Dayagi-Mendels.
Tell Abu Hawam	Glass	1	Stratum III	10th-8th c.	Hamilton 1934: 27, fig. 142	Dating by Artzy 2008.
Tel Beth-Shean	Faience	2	Level V	11th c.	Unpublished	UM reg. no. 29-104-307, 29-104-387
Tel Beth-Shean	Glass	1	Level V	11th c.	Unpublished	UM reg. no. 31-50-133
Tel Beth-Shemesh	Glass	1	Unclear	Unclear	Unpublished	UM reg. no. 61-14-798
Tell Kei-san	Faience	1	Unclear	---	Briend and Humbert 1980: pl. 95: 54	---
Tell Jemmeh	Faience	1	Unclear	Unclear	Golani forthcoming E	With a deep triangular notch on one short side.

Beads Type III.21 – 'Pear'-Shaped (Fig. 33: 5-6)

Elongated beads that are wide and rounded at one end, the other end is tapering (Beck Type I.D.1.g.).

Type II.4 Lotus Bud Stone Pendants (Fig. 23: 13-17) may have inspired this form. The example from Akhziv, slightly more restricted at its middle, resembles such a pendant with a perforation through its longitudinal axis. These beads are identical to Type II.19 Stone Beads (Fig. 30: 19-21). Though not common, they have a limited time span throughout the Iron Age I-II and into the Persian periods, though they may have begun much earlier.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Michal	Faience	1	Tomb 2002	6th-4th c.	Herzog and Levy 1999: fig. 10: 4	From individual burial within a storage jar. Part of necklace threaded by copper alloy wire.
Lachish	Glass	2	Tomb 106	7th-6th c.	Tufnell 1953: pl. 67: 103-104	Mixed tomb. Excavator's date.
Megiddo	Glass	1	Stratum III	8th-7th c.	Lamon and Shipton 1939: pl. 92: 17	With trail decoration. Excavator's date.
Tell el-Farʿah (S)	Faience	1	Tomb 201	10th-8th c.	Starkey 1930: Type T: 34	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Glass	2	Tombs 206, 237	10th-9th c.	Starkey 1930: Bead Type P: 17.	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Lachish	Glass	2	Tomb 218	10th-9th c.	---	Excavator's date.
Akhziv cemetery	Egyptian Blue	1	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 22: 9	---
Tell el-Farʿah (S)	Glass	1	Tomb 206	10th-9th c	Starkey 1930: Type T: 30	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Beth-Shean	Glass	1	Level VII	13th c.	Unpublished	UM reg. no. 29-104-598
Tell el-Farʿah (S)	Faience	1	Tomb 556	17th-16th c.	Starkey 1930: Type T: 34	Dating according to Laemmel 2003: Table 2.

Beads Type III.24 – Elongated Triangular (Fig. 33: 7-8)

Elongated beads with triangular cross-section (Beck Type VIII.C.2.b.).

A rare form, so far known from the Iron Age I-II periods.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Azor	Egyptian Blue	1	Stratum IIIB	10th-9th c.	Golani 2012: fig. 6.1: 23	Dating according to D. Ben-Shlomo, pers. comm.
Tell el-Farʿah (S)	Faience?	1	Tomb 960	12th c.	Starkey and Harding 1932: pl. 72: 25	With incised geometric design. Dating according to Laemmel 2003: Table 6.

Beads Type III.27 – Zoomorphic

Beads imitating animal shapes are extremely rare. A singular example from Hazor may possibly depict a four-legged animal lacking a head and tail that were possibly added later using another, perishable material.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Hazor	Glass	1	Stratum VI	8th c.	Spaer 2012: fig. 9.4: 11	With trail decoration. Possibly a small toy.

7.5.4. Beads Type IV – Terracotta

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
IV.1	Long Truncated Convex Bicone	Iron Age I-II?	Common	Fig. 33: 9-11
IV.2	Rectangular	MB II?	Very rare	---
IV.3	Cylindrical	EB – Persian	Common, primarily Iron Age I-II.	Fig. 33: 12-13
IV.4	Short Oblate Globular	Uncertain	Rare	Fig. 33: 14-15
IV.5	'Doughnut'-shaped	Uncertain	Rare	---
IV.6	Short Oblate Globular 'Melon'	Uncertain	Rare- imitation of Type III.16a Siliceous Beads.	---
IV.7	Truncated Biconical	LB I – Iron Age II?	Rare	Fig. 33: 16-18
IV.8	'Pear'-shaped	Iron Age II	Uncommon	Fig. 33: 19

Beads Type IV.1 – Long Truncated Convex Bicone (Fig. 33: 9-11)
Long truncated convex bicone beads (Beck Type I.D.1.f.) of clay, crudely fashioned around a stick or wire and then dried or fired.

Though most examples of this form appear in the Iron Age I-II, use of plaster for fabrication of such beads dates back to the Neolithic period (Bar-Yosef and Alon 1988: pl. 6: 2-6).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Terra-cotta?	6	Tomb 106	7th-6th c.	Tufnell 1953: pl. 66: 22	Mixed tomb. Excavator's date.
Tel Miqne-Ekron	Terracotta	2	Stratum IB	7th c.	Golani 1996a: 88, fig. 19: 1	---
Tel Beth-Shemesh	Terracotta and glaze	1	Tomb 4	8th-7th c.	Mackenzie 1912-1913: pl. 39: 17	With a glazed(?) surface. Ex-cavator's date.
Lachish	Terra-cotta?	7	Burial cave 1002	8th c.	Tufnell 1953: pl. 66: 22	Excavator's date.
Lachish	Terra-cotta?	10	Tomb 224	9th c.	Tufnell 1953: pl. 66: 22	Mixed tomb. Excavator's date.
Gezer	Terracotta	3	4th Semitic period (Iron Age II?)	10th-8th c.?	Macalister 1912: pl. 137b: 67, 68, 69	With incised decoration. Ex-cavator's date.
Tell el-Farʽah (S)	Terracotta	5	Tomb 206	10th-8th c.	Starkey 1930: Type D: 36, 54, 88, 90; Type H: 46	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell Qiri	Terracotta	2	Strata VII-VIII	11th-10th c.	Ben-Tor 1987: fig. 57: 1, 4	---
el-Jib (Gi-beon)	Terracotta	4	Tomb 3	11th-10th c.	Unpublished	UM reg. no. 62-30-191
Tel Miqne-Ekron	Terracotta	2	Stratum V	11th c.	Golani 1996a: 88	---
Tel Miqne-Ekron	Terracotta	1	Stratum VIA	12th c.	Golani forthcoming A	---
Lachish	Terracotta	1	From tell	Unclear	Tufnell 1953: pl. 66: 22	---

Beads Type IV.3 – Cylindrical (Fig. 33: 12-13)
Cylindrical beads (Beck Type I.D.2.b.) of clay crudely fashioned around a stick or wire and then dried or fired.

A very simple form occasionally found as early as the Early Bronze Age, reappearing primarily in the Iron Age II.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Megiddo	Terracotta	1	Stratum I	6th-4th c.	Lamon and Shipton 1939: pl. 90: 73	Excavator's date.
Tel Michal	Terracotta	1	Tomb 2009	6th-4th c.	Herzog and Levy 1999: fig. 8: 23	From individual cist tomb.
Tel Be'er Sheva	Terracotta	1	Strata III-II	8th c.	Golani forthcoming F	---
Tel Beth-Shean	Terracotta	1	Level IV	8th c.	Unpublished	UM reg. no. 29-104-443
Akhziv cemetery	Terracotta	1	Tomb no. 1, Phase 3	9th-7th c.	Mazar 2004: fig. 22: 23	---
Gezer	Terracotta	1	4th Semitic period	Iron Age II?	Macalister 1912c: pl. 137b: 65	Excavator's date.
Tell Abu Hawam	Terracotta	1	Stratum III	10th-8th c.	Hamilton 1934: pl. 31: 115	With pricked decoration all around circumference. Dating by Artzy 2008.
Tell el-Farʽah (N)	Terracotta	4	Stratum VIIB	11th-10th	Chambon 1984: pl. 74: 4, 6, 31	Dating according to Chambon 1984.

Asherat – Cave Tombs	Terracotta	1	Burial cave 4	31st-27th c.	Smithline 2001: fig. 28: 5	From disturbed burial cave that contained only EB IB-EB II material.
Tell Jemmeh	Terracotta	1	Unclear	Unclear	Golani forthcoming E	---

Beads Type IV.4 – Short Oblate Globular (Fig. 33: 14-15)

Globular beads, slightly oblate or 'squashed' in form (Beck Type I.B.1.a.).

An uncommon form found primarily during the Iron Age I-II periods.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Megiddo	Terracotta	1	Stratum II	7th c.	Lamon and Shipton 1939: pl. 91: 73	With a light red wash. Excavator's date.
Tell Jemmeh	Terracotta	1	Building II, Room A	8th c.	Golani forthcoming E	---
Hazor	Terracotta	1	Stratum VB	8th c.	Spaer 2012: fig. 9.5: 4	---
Gezer	Terracotta	1	Unclear	4th Semitic (Iron Age II?)	Macalister 1912c: pl. 137b: 66	---
Tell el-Farʻah (S)	Terracotta	2?	Tombs 241, 226	10th-9th c.	Starkey 1930: Type N: 85, 126	Dating according to Laemmel 2003: 47-48; Israeli; Israeli 1993: 443.
Tell el-Farʻah (N)	Terracotta	1	Stratum VIIB	11th-10th c.	Chambon 1984: pl. 74: 19	Dating according to Chambon 1984.
Tel Qiri	Terracotta	2	Stratum VIII-IX	12th-11th c.	Ben-Tor 1987: fig. 57: 2-3	---
Tell Jemmeh	Terracotta	1	Unclear	14th–13th c.	Golani forthcoming E	---
Tel Beth-Shemesh	Terracotta	2	Room 407	Unclear	Unpublished	UM reg. nos. 61-14-2487, 61-14-2488

Beads Type IV.7 – Truncated Biconical (Fig. 33: 16-18)

Short truncated biconical beads (Beck Type I.B.2.f.).

A rare variant, the few published examples from Gezer bear a design, though it is unclear if this was painted or incised.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell Jemmeh	Terracotta	1	Unclear	Unclear	Golani forthcoming E	---
Gezer	Terracotta	3	Unclear	4th Semitic period (Iron Age II?)	Macalister 1912c: pl. 137b: 67-69	---
Tel Beth-Shean	Terracotta	1	Stratum IX	15th c.	Unpublished	UM reg. no. 29-104-783

Beads Type IV.8 – 'Pear'-Shaped (Fig. 33: 19)

Short or elongated 'pear'-shaped beads (Beck Type I.D.1.g.). The beads were all formed by hand and poorly fired. The perforation was not produced through the central axis but was rather placed obliquely, made by a thin wire or stick and is usually found in the center of the broad end, protruding out from the curving shoulder.

Though these beads are simple and crudely made, their form and perforation are distinctive. All known examples originate from southern sites. The sole example from an Late Bronze Age II context at Tell Jemmeh suggests that it may have been intrusive from the late Iron Age II occupation at that site.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel ʻAro'er	Terracotta	6	Stratum IIA	7th c.	Thareani 2011: fig. 125: 17; fig. 3.111	---
Tell Jemmeh	Terracotta	10	Buildings I and III	8th-7th c.	Golani forthcoming E	---

Tell Jemmeh	Terracotta	1	Room F	14th–13th c.	Golani forthcoming E	Possibly intrusive from later strata.

7.5.5. Beads Type V– Bone/Ivory

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
V.1	Elongated Spacer	LB – Iron Age II	Common. Found in stone as well as bone.	Fig. 34: 1-2
V.2	Rectangular Spacer	LB – Early Iron Age II	Common	Fig. 34: 3-4
V.3	Cylindrical	Prehistoric – Modern	Common	Fig. 34: 5-8
V.4	Plano-Convex	MB II – Modern	Common. Often identified as spindle whorls.	Fig. 34: 9-11
V.5	Lentoid	MB II – Modern	Common. Often identified as spindle whorls.	Fig. 34: 12-13
V.6	Flat Disk	Prehistoric – Modern	Very common	Fig. 34: 14-16
V.7	Long Truncated Convex Bicone	Prehistoric – Persian	Common	Fig. 34: 17-18
V.8	Flat Diamond-Shaped	LB – Iron Age I	Rare	---
V.9	Multi-Tubular Spacer	LB	Rare	---
V.10	Cubical	Iron Age II?	Very rare	Fig. 34: 19
V.11	Short Oblate Globular	Iron Age II?	Very rare	Fig. 34: 20
V.12	Short Truncated Biconical	Iron Age II?	Very rare	Fig. 34: 21
V.13	Scaraboid	Unclear	Very rare	---
V.14	Square Disk	Iron Age II?	Very rare	Fig. 34: 22

Beads Type V.1 – Elongated Spacer (Fig. 34: 1-2)

Elongated spacer beads are made of carved and polished bone fashioned into a long strip while a series of holes are drilled through the width (Beck Type XVII.A.3.b.1.). Complete examples of this type may feature up to eleven holes though most examples have less.

This type is common throughout the Late Bronze and Iron Ages in the southern Levant but its origins go further east and may be traced back to the mid-4th millennium such as at Ur, where it is made of stone (Beck 1928: 13-14, fig. 15). The same form in stone are here grouped together.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Farʿah (S)	Bone	1	Tomb 241	10th-9th c.	Petrie 1930: pl. 42: 318	Flat plate. Three holes. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Miqne-Ekron	Bone	2	Stratum V	11th c.	Golani 1996: 88, fig. 19: 2	With six holes.
Tell el-Farʿah (S)	Bone	1	Tomb 119	11th c.	Petrie 1930: pl. 36 (lower right)	With three holes. From a single-period burial. Dating according to Laemmel 2003: Table 1.
Tel Miqne-Ekron	Bone	1	Stratum pre-VIB	12th-11th c.?	Golani forthcoming A	With two holes.
Tel Miqne-Ekron	Bone	1	Stratum VIB	12th c.	Golani forthcoming A	With three holes.
Beth Shean	Ivory	2	Tomb 7	13th-12th c.	Oren 1973: figs. 41: 28-29; 77: 4	Probably from Anthropoid coffin burial that was disturbed. With 8 holes.
Gezer	Bone	3	Unclear	15th-13th c.	Macalister 1912b: fig. 290: 1-3	One with 11 holes, one with 10, one with 8. Excavator’s date.
Gezer	Jasper	1	Unclear	15th-13th c.	Macalister 1912b: fig. 290: 4	Flattened. Four holes. Excavator’s date.
Gezer	Diorite	1	Unclear	15th-13th c.	Macalister 1912b: fig. 290: 5	Flattened. Three holes. Excavator’s date.

Lachish	Bone	1	Tomb 216	15th-14th c.	Tufnell 1958: pl. 28: 6; 54: 8	Mixed tomb. Flattened. With three holes. Excavator's date.
Yiftaḥ'el	Green stone	1	Burial cave	19th-15th c.	Barda and Braun 2003: fig. 13: 15	Partial. Fluted on one side. Holes at opposing ends.
Tel Beth-Shemesh	Bone	1	Room 527	Unclear	Unpublished	UM reg. no. 61-14-2236

Beads Type V.2 – Rectangular Spacer (Fig. 34: 3-4)

Spacer beads of carved and polished bone in the shape of a flat rectangle with two holes drilled through its width through the side, or through its length (Beck Type XVII.A.3.a.). One of the flat sides often bears an incised decoration of a dot and circle motif.

This form of spacer bead in bone or ivory appears to have been typical of the Late Bronze to Iron Age IIA period. Use of the ring and dot decorative motif is widespread as early as the Middle Bronze Age but its use on beads, pendants and plaques (see Bone Pendant Types III.1, III.2; Figs. 25, 26) is most common during the Iron Age II (Platt 1978).

The example from Akhziv is of similar concept, but bears Egyptianizing decorative techniques. Similar objects in steatite and faience with Horus Eye openwork decoration are known from mixed Phoenician tombs at Tharros, dated at the earliest to the 7th-6th centuries (Barnett and Mendleson 1987: pls. 68e-g, 70c-d, 71f, 111: 19/34, 123: 25/23, 128: 28/28).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Lachish	Bone	1	Tomb 107	10th-8th c.	Tufnell 1953: pl. 67: 114	Mixed tomb. Partial, with at least 4 ring and dot incisions. Excavator's date.
Tell Beit Mirsim	Bone	2	Tomb 500	10th-8th c.	Golani 2004b: 194, fig. 4.3: 1	Mixed tomb. With 6 ring and dot incisions.
Gezer	Ivory	1	Stratum VIII	10th c.	Dever 1986: pls. 62: 12, 119: c	With 12 ring and dot incisions. Defined as a gaming piece. Excavator's date.
Akhziv cemetery	Bone	1	Tomb ZX	10th-8th c.	Dayagi Mendels 2002: fig. 3.9: 37	One side depicts a Horus eye, the other a crouching lion. Dating according to Dayagi-Mendels.
Tel Miqne-Ekron	Bone	1	Stratum IVA-B	11th-10th c.	Golani 1996a: 88, fig. 19: 3	With 6 ring and dot incisions.
Timna	Bone	1	From Sanctuary	14th-13th c.	Kertesz 1988: fig. 83: 99	With 8 ring and dot incisions.

Beads Type V.3 – Cylindrical (Fig. 34: 5-8)

Cylindrical beads, often found polished, made of a cut and hollowed out bone segment (Beck Type I.D.2.b.). Such beads may be decorated by incisions (Fig. 34: 6), rings and dots (Fig. 34: 7) or engraved by a ribbed design around its circumference (Fig. 34: 8).

This form of bone bead is known from prehistoric to modern times.

Beads Type V.4 – Plano-Convex (Fig. 34: 9-11)

Beads of plano-convex form (Beck Type I.A.1.c). These beads may often be found decorated with a ring and dot motif.

Though these objects are often described as spindle whorls, they could have also functioned as beads. Similar Items are also found in stone (see above Type II.20 Stone Beads; Fig. 30: 22) and siliceous materials (Bead Type III.15 Siliceous Beads; Fig. 32: 19-20). For an example of two such objects mounted base to base on a spindle from Megiddo, see Lamon and Shipton 1939: pl. 95: 38.

Such objects are known from the Middle Bronze Age until modern times.

Beads Type V.5 – Lentoid (Fig. 34: 12-13)

Beads of lentoid shape (Beck Type I.A.1.e.) usually made of bone or ivory. These beads may also be found decorated with ring and dot motif.

Though these objects are often described as spindle whorls, they could have also functioned as beads. Such objects are known from the Middle Bronze Age until modern times.

Beads Type V.6 – Flat Disk (Fig. 34: 14-16)
Beads of flat disk shape (Beck Type I.A.1.b.).

The flat surfaces of scapulae and pelvic bones are well suited to the production of such beads. In ivory, they may be easily produced by slicing disks off a thin tusk and then drilling a hole through their center.

These beads are very common from the prehistoric to modern times.

Beads Type V.7 – Long Truncated Convex Bicone (Fig. 34: 17-18)
Beads of long truncated convex bicone shape (Beck Type I.D.1.f.).

More commonly found in stone and siliceous material, these beads may be carved from a solid bone or ivory piece or by paring down the ends of a thick bone shaft. Such beads are found from the prehistoric to the Persian periods. The use of bone also enables incised decoration, such as hatched lines and the ring-and dot motifs on a bead from Tomb 213 at Tell el-Farʿah (S), dated to the 10^{th}-8^{th} centuries (Starkey 1930: Type F: 15).

Beads Type V.10 – Cubical (Fig. 34: 19)
A cubical-shaped bead (Beck Type X.C.2.b.).

A rare form, found with incised ring-and-dot decoration.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Farʿah (S)	Bone	1?	Tomb 241	10^{th}-9^{th} c.	Starkey 1930: Type C: 50	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.

Beads Type V.11 – Short Oblate Globular (Fig. 34: 20)
Short oblate globular shaped beads (Beck Type I.B.1.a.).

This form is rarely found in bone, though it is extremely common in stone (Type II.2 Stone Beads; Fig. 29: 3-7) and siliceous materials (Type III.2 Siliceous Beads; Fig. 31: 5-8).

Beads Type V.12 – Short Truncated Biconical (Fig. 34: 21)
Short biconical beads with carinated sides and truncated at both ends (Beck Type I.C.1.f.).

Similar to Type II.4 Stone Beads (Fig. 29: 11-14) and Type III.3 Siliceous Beads (Fig. 31: 9-12), this form in bone or ivory is rare.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Farʿah (S)	Ivory	1?	Tomb 201	10^{th}-8^{th} c.	Starkey 1930: Type L: 17	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Bone	1?	Tomb 229	10^{th}-9^{th} c.	Starkey 1930: Type L: 35	Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tel Beth-Shean	Bone	1	Level VI	12^{th} c.	James 1966: fig. 101: 30	UM reg. no. 32-15-371

Beads Type V.14 – Square Disk (Fig. 34: 22)
Flat square-shaped beads with a perforation through the center (Beck Type IX.A.2.b.).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Ash-kelon	Bone	1	Grid 50, Phase 7	7^{th} c.	Park 2011: fig. 15.1: 45936	---

7.5.6. Beads Type VI – Shell

Type	*Sub-Type Definition*	*Chronological Range*	*Comments*	*Fig.*
VI.1	Flat Disk	Prehistoric – Modern	Common	Fig. 35: 1-2
VI.2	Square, Rectangular or Circular Conus Whorl	Chalcolithic – Persian	Common	Fig. 35: 3-4
VI.3	Modified Shell	Prehistoric – Modern	Common	Fig. 35: 5-6
VI.4	Ground Down Conus Shell	Iron Age I-II	Locally, only at Tel Miqne-Ekron.	Fig. 35: 7

VI.5	Tabular	Uncertain	Rare	---
VI.6	Dentalium	Prehistoric – Modern	---	Fig. 35: 8
VI.7	Flat Oval Strip Spacer with Double Perforation	EB – MB II	Especially common in Intermediate Bronze Age.	---
VI.8	Long Truncated Convex Bicone (flattened)	Uncertain	Rare	---
VI.9	Cylindrical	Uncertain	Uncertain	---

Beads Type VI.1 – Flat Disk (Fig. 35: 1-2)

Flat disk-shaped beads of shell (Beck Type I.A.2.b.).

Such beads may be made from almost any kind of shell with enough of a flat surface that enables the forming of a disk, which is then perforated, usually from both sides, in order to create the stringing hole. The apex of *Conus* shells is well suited for the production of such beads as it may be broken off from the rest of the shell, producing a flat disk. Broad *Pinctada* shells and Ostrich eggshells are also commonly used as they both bear wide surfaces from which a flat disk may be cut (see Bednarik 1997 on the production techniques of Ostrich eggshell flat disk beads). The latter material is especially common in beadwork of the Intermediate Bronze Age.

Beads Type VI.2 – Square, Rectangular or Circular Conus Whorl (Fig. 35: 3-4)

Flat beads made of the apical or body whorl of a large *Conus* shell, manufactured by sawing or abrading to produce a circular shape, or on four sides, until a square to rectangular shape was achieved. The perforation, usually wide, was drilled through the center of the broad side or may have been a natural opening in the shell (Beck Type IX.A.2.b).

Such beads, in square and rectangular form, often found polished, have been termed 'Conus Whorl Beads' and are found throughout the ancient Near East as early as the Chalcolithic period (Reese 1986: 324-326). The *Conus* shell, probably one of the species originating from the Red Sea (D. Reese, pers. comm.) was probably used, as the Mediterranean species (*Conus mediterraneus*) is too small for the production of such a bead. Some scholars have suggested that the large perforation on these beads is representative of the eye, in which case such beads were worn with one flat side in a frontal display (Ben-Basat 2011: 72).

Beads Type VI.3 – Modified Shell (Fig. 35: 5-6)

These are various kinds of shells of no specific form and modification other than having been adapted for stringing simply by the punching of an irregularly shaped hole through their dorsum.

The use of a variety of modified shells for ornamentation is well-known already from the prehistoric periods and continues into modern times (Bar-Yosef 1989; 2005a).

Beads Type VI.4 – Ground Down Conus Shell (Fig. 35: 7)

Conus shells with a ground down labial perforation.

Conus shells (*Conus mediterraneus*) are found throughout the Mediterranean and were commonly used in Greece during the Neolithic and the Bronze ages as ornaments and burial offerings (Reese 1983). Many of these shells are naturally holed at their apex and may have been used as a bead strung through the apex and out the labial opening. During the Late Helladic II-III period in the Aegean, many such shells are found with their labial side ground down, producing a flat surface with an irregularly shaped hole. Other shells show signs of grinding but were not holed. One excavation at Mycenae revealed a deposit of over 500 cone shells, 323 of which were ground down and holed and eight of which were filled with lead (Reese 1983: 354-356). Throughout the Aegean region, ground down *Conus* shells have also been found at the sites of Knossos and Chania in Crete, Prosymna, Tiryns, Nauplion and Midea in the Argolid, Perati in Attica, Lefkandi in Euboea and Koukounaries in Paros, all from occupational levels and burials of the Late Helladic II-III period (Reese 1983: 356; 1985: 344-345; 1988: 459; Reese, pers. comm.). These occur alongside of unmodified *Conus* shells, which may have also been used as ornaments.

In Cyprus, ground down and unmodified *Conus* shells have been found at Kition, associated with the Late Cypriot III temple (Reese 1985: 340) and in tombs and rooms associated with a sanctuary dated to the Late Cypriot II-III period at Maa-Palaeokastro (Reese 1985: 340, 343-344; 1988: 458-459). More ground down *Conus* shells have been found in Late Cypriot II-III contexts at Hala Sultan Tekke and at Enkomi (Reese, pers. comm.) alongside unmodified *Conus* shells.

The reason why these shells were ground down and the manner in which they were used remains unclear. As numerous unworked examples have been found alongside of worked ones, this may indicate various uses or stages in the production process. They may have functioned as gaming pieces or toys, though they may have also functioned as personal ornaments (Reese 1983: 356; 1985: 353) that could be strung through the ground down hole.[263] The lead-filled shells may have been used as fishing or garment weights (Reese 1983: 356). Whatever their use, ground down *Conus* shells were characteristic of the Aegean region and Cyprus during the latter portion of the Late Bronze Age and are not found anywhere else at this time (D. Reese, pers. comm.).

Fifty ground down *Conus* shells were recovered from the excavations at Tel Miqne-Ekron. Though these shells were found throughout Strata I-VII, the majority appear to originate from Strata V-VII of the Iron Age I. Most of these were ground down and holed, while a few (4) exhibit a ground down surface that was not holed. The *columella*, or internal spiral spine within most of these shells is broken off, possibly to facilitate their stringing.

The finding of such a large amount of ground down *Conus* shells at Tel Miqne-Ekron is a unique phenomenon. Though the shell itself is common, particularly in regions bordering the Mediterranean, prior to the Iron Age, ground down *Conus* shells are known only in the Aegean region and Cyprus. During the Iron Age in the southern Levant, the finding of such shells only at Tel Miqne-Ekron, primarily in strata of the Iron Age I, appears to indicate that this type of modification on *Conus* shells is of Aegean/Cypriot inspiration, possibly a cultural tradition that was brought by the Sea Peoples during the beginning of the Iron Age I (Stratum VII) when these objects first appear at the site. The finding of these objects in the later Iron Age strata at Tel Miqne-Ekron may be due to the retention of an ancient tradition or simply the mobility of such small objects as the result of building and leveling activities that post-date the Stratum VII occupation. If the modification of *Conus* shells is a cultural tradition brought by the Sea Peoples into Canaan and continued by their Philistine descendants throughout the Iron Age I, then these objects may possibly be considered as a cultural and ethnic marker characteristic of the Sea Peoples/Philistines themselves during the Iron Age I.

Beads Type VI.6 – Dentalium (Fig. 35: 8)

The thin, tubular form of the Dentalium shell make it a natural choice for its use as a stringing ornament that requires little or no modification. Such shells are found along the Mediterranean and the Red Sea shores and were used as beads in Egypt as early as the Badarian period (Andrews 1976: 19) and throughout the outhern Levant in even earlier periods (Reese 1991; Bar-Yosef Mayer 1989; 2005a;).

7.5.7. Beads Type VII – Composite (Fig. 35: 9-10)

Composite beads made of two materials. All such beads have circular caps of gold or silver sheet-metal that hold a bead of faience, glass or stone. The caps of the beads from Akhziv are decorated with braided wire.

Though rare, these elaborate beads are found from the Middle Bronze Age to the end of the Iron Age II.

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tel Miqne-Ekron	Rock Crystal and Silver	2	Stratum IB	7th c.	Golani forthcoming A	From sealed hoard.
Akhziv cemetery	Rock Crystal and Gold	2	Tomb no. 1, Phase 1	10th-9th c.	Mazar 2004: fig. 22: 10-12, 25	Caps decorated with braided wire. Partial, depicted in three parts.
Megiddo	Gold and Paste	2	Stratum IX	16th-15th c.	Loud 1948: pl. 209: 37	Excavator's date.
Gezer	Gold? and another material	2	Burial cave 28 II	19th-18th c.	Macalister 1912: pl. 31: 2, 36: 15	One of the beads mounted on a swivel ring. Excavator's date.

7.5.8. Summary and Discussion – Bead Types I–VII

The color of beads may be instructive as to their significance. A study of 3003 solid beads of various materials originating from selected sites of the 8th–6th centuries in the southern Levant has shown that reddish beads comprised 32%, blue beads 25% and bone beads 24%, while yellow, gray, light blue-green, clear, dark blue, brown, black and white beads made up between 8–1% (Limmer 2007: Chart 7.1). These color ratios probably reflect cultural, aesthetic or symbolic reasons for valuing red and blue tones in particular. The large proportion of bone beads was probably due to economic considerations, as this material was widely available and required only minimal expertise to shape. According to Limmer, the dominance of red and blue may reflect the symbolic importance at-

[263] One of the Type VI.4 Ground Down Conus Shell Beads from Tel Miqne-Ekron was found in Stratum IV, in proximity to a collection of various beads and pendants, suggesting that this shell, like the other jewelry objects, was indeed used for ornamentation.

tached to these colors by the Israelites, as in the Old Testament shades of these two colors were connected with the garments of the high priest: murex blue or *tekhlet*, murex purple or *argaman*, red, termed *tolaʿat hashani*, and white, which is uncolored or neutral (idem: 110-162).

Beads of metal (Type I) are not as common as those of stone (Type II) and siliceous materials (Type III). As Type I beads are usually made of precious metal, they are small and often hollow, thus using a smaller amount of material. While fabrication in metal enabled the use of forms and decorative techniques such as granulation that were not possible in other materials, it involved several stages and was thus labor-intensive. Specific techniques inherent to metal jewelry that were utilized to create forms not found in other materials include granulation, the use of sheet-metal and chasing/repousée. Thus, Type I.1 Granule Beads (Fig. 28: 1-4), Type I.2 Wound-wire Beads (Fig. 28: 5-6) and Type I.3 'Winged' Beads (Fig. 28: 7) appear only in metal, usually silver or gold. Type I.2 is already found locally during the Late Bronze Age and Type I.1 even earlier, in the Middle Bronze Age. Type I.3 was apparently a Phoenician innovation of the late Iron Age II. Type I.5 Plain Spherical or Squat Globular Hollow Beads (Fig. 28: 10) and the fluted variety of this form (Type I.5a, Fig. 28: 11-14) began during the Middle Bronze Age and were a reflection of the same form made of other materials. However, granular decoration on hollow spherical beads appeared only during the late Iron Age II. Most of the other metal beads identified in this study also had a long pedigree beginning in earlier periods and were made of other materials as well.

Type II stone beads are generally simple geometric shapes with little or no decoration. While the types of stone included non-precious limestone and chalkstone, most stone beads are made of a variety of colorful semi-precious stones such as carnelian, agate and rock crystal. As they have a limited range of geometrical forms, each form is classified as a separate sub-type of stone beads. Though many variations occur, this general scheme simplifies their classification.

Stone beads are relatively common in most jewelry assemblages. Before the widespread use of faience and glass in the latter half of the 2nd millennium, semi-precious stone was usually the most common raw material used to manufacture beads. The pleasing colors make them attractive and the ancients imparted them with symbolic qualities and prophylactic powers.

The range of stone-bead forms during the Iron Age II was a direct development of that during the Late Bronze Age and the Iron Age I. It was primarily during the Late Bronze Age, with the invention of advanced drilling techniques (see Stocks 1989), that a wider range of forms was first produced. From this period through the Iron Age I and II, little or no typological development is noted; nearly all types identified in Iron Age II contexts were also found during the Iron Age I and Late Bronze Age, if not earlier in the Early or Middle Bronze Ages. Typologically, stone beads are very poor chronological indicators.

Type III siliceous beads made of glass, faience and Egyptian Blue are grouped together because the basic raw ingredient for all these materials is silica, whose plastic nature enabled a larger variety of forms and decorations than metal, stone, bone or shell. Beads of faience and Egyptian Blue are uni-chrome and were often made in a mold, enabling mass-production of standard forms. Glass beads, on the other hand, are less common as they were individually made, and varied in form and decoration, though for the most part they continued the same forms found in faience.

Siliceous beads were the most common during the Iron Age II. The majority of the types reflect common local traditions that began during the Middle Bronze Age (primarily in faience) and continued into the Late Bronze Age, Iron Age I and Iron Age II, when some forms were also made of glass. Like stone beads, most siliceous beads have simple forms that are not culturally or chronologically instructive. Of all the Type III beads, only Type III.12b Triangular Horned Stratified 'Eye' Beads (Fig. 32: 4-7) can definitely be associated with the late Iron Age I and the Iron Age II. Type III.11 Lotus Beads (Fig. 31: 40-41), as well as Type III.17 'Amphora'-Shaped Beads, though not common, appear to have been restricted to the end of the Iron Age II and the Persian period.

Type IV terracotta beads are made of an inexpensive, readily available material that can be easily formed into any desired shape. However, beads of this material were generally unpopular.[264] Aside from the fact that clay ornaments were less aesthetically pleasing than those made of other materials, terracotta itself apparently did not possess the same significance for the wearer as the symbolic and colorful semi-precious stones, glass and faience.

The manufacture of beads from clay dates back to the Neolithic period. At Nahal Hemar, beads made of plaster were rolled around a cord and colored with minerals (Bar-Yosef and Alon 1988: pl. 6: 2-6). These occurred alongside stone beads (idem: pl. 6: 1) and painted wooden beads (idem: pl. 7: 1-15), though as the latter were made of perishable material they rarely survived in the archaeological record.

Type V bone and ivory beads are not very common, although bone was a readily accessible and inexpensive material. Ivory, on the other hand, was less accessible, being obtained through trade. Their lack of popularity was

[264] A general disdain for terracotta beads may explain why so few are described in scholarly publications, wherein attractive, colorful and decorated beads of stone, siliceous materials or metal are much more prevalent. As terracotta beads were not necessarily fired, they are not as well preserved as other, more durable materials such as siliceous materials, stone and metal.

probably due to the fact that bone and ivory do not possess the color range of semi-precious stones and siliceous materials. The manufacture of bone and ivory jewelry is always limited by the size and structure of the raw material, though ivory holds greater potential for sculpting and decorating than bone. Both materials were usually reserved for the production of larger sculpted or decorated items such as handles, inlays and other objects.

Type VI beads of shell are identified as beads if they are perforated, whether naturally or artificially. Archaeologically, a perforated shell can be assumed to have been a bead or pendant if it is found in context (e.g., a burial), if it is part of a series of similarly perforated shells found together (e.g., a necklace), or if it exhibits clear signs of artificial perforation (see Francis 1982). While shells are an inexpensive and readily available material, their use as ornaments is always limited by the size and structure of the raw material. The origin of the shells is an indicator of trade connections.

7.5.9. The Cultural Context of Beads

Arrangements of beads in necklaces, as displayed in museums or illustrated in publications, are usually conjectural, as the materials used to string them are rarely preserved.[265] The limited evidence from iconographic and pictorial representations, and the even rarer and usually incomplete testimony from excavated *in situ* finds, indicates that beads were not haphazardly combined, but followed a variety of designs that may have had significance. The color arrangements were surely significant, though they remain largely unknown. In addition to necklaces, strands of beads were also worn on the arms and ankles. Beads also served as hair ornaments, were sewn onto clothing, and were attached to metal jewelry (see Figs. 9: 6; 12: 18).

Late Bronze and Iron Age terracotta female plaques commonly depicted necklaces composed of beads, such as on Iron Age II female figurines from Tel ʿIra (Beck 1990: fig. 1) and Tel Batash (Mazar and Panitz-Cohen 2001: pl. 30: 3), and on an ivory panel that portrays a woman in a window from Nimrud, dated to the 9th–8th centuries (Barnett 1975: pl. 4: c 14).

One of the outstanding specialties of Egyptian jewelers was intricate beadwork. The Egyptians were very fond of the broad, multi-stranded *shebyu* collars, which were commonly depicted in New Kingdom Egyptian sculpture and pictorial representations[266] adorning men, women, children and deities (Pritchard 1954: figs. 76, 395, 410, 545; Andrews 1990: fig. 126). Such necklaces are considered 'honorific' jewelry, as they were often awarded by the pharaoh and the queen to reward valor (Andrews 1990: 181-182). A broad collar is seen on an Egyptian-style female figurine from Gezer dated to the Late Bronze Age (Macalister 1912c: pl. 220: 23; Barnett 1975: pl. 75: S 215; Cornelius 2004: pl. 5.58-5.59) and a faience figurine of Ptah-Pataekos from Bethsaida, dated to the Iron Age II (Arav and Freund 1999: 91-94, fig. 37). Further examples are found on ivories depicting male figures from Nimrud, dated to the 9th–8th centuries (Markoe 1990a: fig. 12) and on the torso of a larger-than-life male statue from the Phoenician site of Sarepta in Lebanon, dated to the 6th–5th centuries (Markoe 1990a: fig. 15).[267] Cypriot votary statues from the 6th century also depict males with broad collars of Egyptian style, made of several strands of beads and pendants (Karageorghis 2000: figs. 176, 179, 182) and females with beaded necklaces (idem: figs. 184, 214).

The Neo-Assyrians never adopted intricate beadwork fashions like the Egyptians, but necklaces of beads were commonly depicted on the king or on supernatural protective demons at Nimrud, dating to the 9th–8th centuries (Pritchard 1954: figs. 441, 614). In addition, Neo-Hittite representations from Zinjirli dated to the 8th–7th centuries depict a queen wearing bead arrangements (Barnett 1975: pl. 75: S 215).

Aegean pictorial representations often show necklaces on men and women (Younger 1992: 261-269). Women commonly wear necklaces that may appear as chokers, torques or necklaces of beads, usually in combination with a bracelet (Younger 1992: 264-269). Necklaces on males are less common in Aegean art (Televantou 1992: pls. 35: a, 37: d, 41: a; Younger 1992: 264-268).

In situ necklaces of beads and pendants in burials are few, not because they were not worn by the deceased, but because they are nearly impossible to expose in an excavation without moving the beads from their place. Exceptions are an early Iron Age I bead necklace composed of five strands found around the neck of an adult burial of

265 For example, the well-known arrangement of beads and pendants from Room E of the Fosse Temple at Lachish is arbitrary (Tufnell, Inge and Harding 1940: 75-76, pl. 14), as it is not known how the numerous beads and pendants were originally threaded.

266 However, it is interesting to note that both the Syrian workshops of the 8th century that produced the Nimrud ivories, and also the Cypriot workshops of the 6th–5th centuries that fashioned stone sculptures, depicted dress and jewelry styles typical of the defunct New Kingdom. This is one of the expressions of Cypro-Phoenician art of the late Iron Age II, which adopted archaic dress styles at a time when they had gone out of fashion in Egypt itself (Markoe 1990a: 116; Faegersten 2005).

267 As a case in point for the recurring use of archaic styles by the Phoenicians during the Iron Age II, the type of pendant depicted on the Sarepta statue (Type I.4 Metal Pendant, see above 7.4.1, Fig. 22: 16-25) is very common in the Late Bronze Age, contemporary with the Egyptian New Kingdom. In the Iron Age II, however, this pendant is rare; only a few examples are known from the Phoenician necropolis at Akhziv (Mazar 2001: fig. 66: 20; Dayagi-Mendels 2002: fig. 4.21: 62) and a single example is known from Tell el-Farʿah (S) (Petrie 1930: pl. 39: 456). All of these examples are of debased craftsmanship compared with their Late Bronze Age predecessors.

undetermined sex from Tell es-Saʿidiyeh (Pritchard 1980: 26, fig. 64: 2), and a Persian-period necklace composed of faience, stone and silver granule beads found around the neck of a female skeleton from Kamid el-Loz (Poppa 1978: pl. 23: 68; 41: Tomb 76). In the latter grave, numerous beads and pendants were also found near the upper torso and neck (Poppa 1978: pls. 26-41). These may certainly have been part of additional necklaces, or they could have been incorporated in a headdress, sewn into the clothing or braided in the hair.[268]

In summary, the available evidence indicates that throughout the Bronze and Iron Ages as well as in the Persian period, both men and women in the southern Levant wore beads. These were probably arranged in necklaces of one or more strands that may also have incorporated pendants, and may have displayed intricate and symbolic color arrangements that are unknown to us. Broad, elaborate collars of Egyptian inspiration were adopted by the Phoenicians and used throughout the Iron Age II.

7.6. Varia

In this category are included jewelry items that do not readily lend themselves to any one of the abovementioned functional types.

7.6.1. Headbands or Mouthpieces (Fig. 35: 11-12)

Elongated oval-shaped sheet-metal strips, between 10-30 cms in length, usually made of gold, with a stringing hole punched through at each end. Some of these objects bear an additional decoration of pricked dots around their circumference. Several examples, such as those from the Persian Garden at Akko and those from Kamid el-Loz, are more elaborately decorated in *repousée* with hatched lines and rosettes or an Egyptian-style Hathor depiction on a broad, wristwatch-shaped band.

All these objects originate from tombs and were often found underneath the skull or in the vicinity of the mouth. For this reason they are usually regarded as mouthpieces, headbands or diadems worn on the head or neck. The available examples appear to have been headbands or diadems as most are too narrow to have covered the mouth.

Headbands may have been Mycenaean or Cypriot in origin, where they are commonly found in burials of the Late Bronze Age (Dothan 1967: 220, 245). Miniature gold versions begin to appear already during the Early Helladic period in Crete (Seager 1912) and gold headbands are well known during the Middle Helladic period (Hickman 2012: pl. 135). Locally, they first appear during the Late Bronze Age and continue into the early Iron Age II, as at Tell el-Farʿah (S). Their appearance in the southern Levant may be an expression of Mycenaean influence of the Late Bronze Age that slowly dies out along with the gradual assimilation of the Sea Peoples into the local cultural milieu. These items were also adopted by the Phoenicians. Elongated gold strips pierced at both ends are known from Sardis in western Asia Minor, dated to the 7th-6th centuries (Densmore Curtis 1925: pl. 2: 1-2, 4, 6).

Site	*Material*	*Amount*	*Provenance*	*Date*	*Reference*	*Remarks*
Tell el-Farʿah (S)	Gold	1	Tomb 201	10th-8th c.	Petrie 1930: pl. 40: 500; pl. 36	Undecorated. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	1	Tomb 201	10th-8th c.	Petrie 1930: pl. 40: 499; pl. 36	With line of pricked dots around perimeter. Found underneath skull. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Tell el-Farʿah (S)	Gold	1	Tomb 239	10th-9th c.	Petrie 1930: pl. 30: 120	Undecorated. Dating according to Laemmel 2003: 47-48; Israeli 1993: 443.
Azor	Gold	1	Grave 63	11th c.	Dothan 1989: 168, figs. 15-16	Undecorated
Akhziv cemetery	Silver	1	Tomb T.C. 3	11th c.	Mazar 2001: fig. 5: 5	Found covered with remains of flax cloth in a pile of bones.
Megiddo	Gold	3	Tomb 39	12th-11th c.	Guy and Engberg 1938: pl. 165: 12, 16-17	One with hatched and incised decoration. Excavator's date.

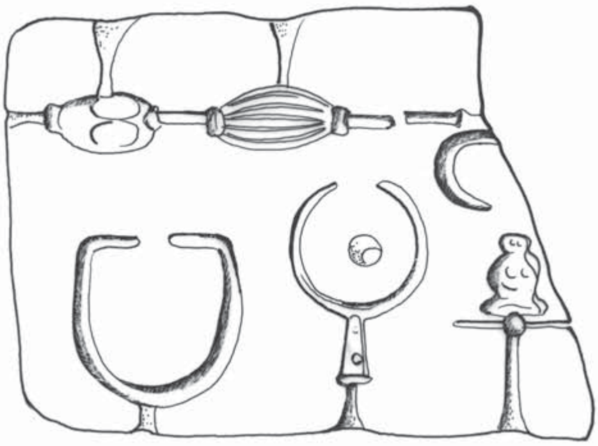
[268] Among the numerous Persian-period burials uncovered at this site, the only inhumations with Egyptian-style anthropomorphic amulets were those of an infant (Hachmann and Penner 1999: pl. 36: 18 [Tomb 34]) and a young female (Hachmann and Penner 1999: pl. 36: 25-26 [Tomb 76]). Though this is very limited evidence, it may be indicative of the special need of juveniles for added protection in the passage to the netherworld.

Beth She-an	Gold	1	Tomb 202A	12^{th} c.	Oren 1973: figs. 46: 15; 76: 11	With engraved hatched decoration. Appears to have been originally tied over the mouth of the body.
Tel Dan	Gold	8	Stratum VIIB	14^{th}-13^{th} c.	Biran and Ben-Dov 2002: fig. 2.137, 2.138	Undecorated. Found beneath a skull. May have been a diadem sewn onto a ribbon.
Gezer	Silver	1	Cave I.10a	14^{th}-13^{th} c.	Seger and Lance 1988: pls.19: 8, 74: c	Undecorated.
Akko – Persian Garden	Gold	2	Tomb A2	14^{th} c.	Ben-Arieh and Edelstein 1977: 26, fig. 14: 10-11, pl. XI: 9, XVIII: 1	Found in place on forehead of single male burial.
Amman Airport	Gold	2	From temple	14^{th} c.	Hankey 1995: 175, fig. 3: 5872, 5878	One plate bears hatched incised decoration.
Megiddo	Gold	3	Tomb 912B	14^{th} c.	Guy and Engberg 1938: pl. 128: 9-11	Undecorated. Excavator's date.
Kamid el-Loz	Gold?	7	Unclear	15^{th}-13^{th} c.	Hachmann 1980: pl. 13: 1-2, 4-6, 8	Two of the pieces have Egyptian-style Hathor depiction in repousée.

Figures

Figure 1

1



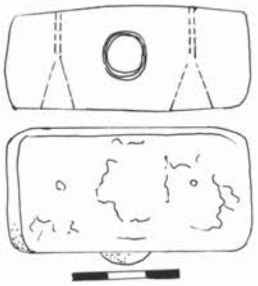
2

1.	A scene from the Mastaba of Mereruka, depicting activities in a precious metal workshop during the Egyptian Old Kingdom (6th dynasty). In the upper frieze, the precious metal is first weighed out (upper left), then melted down (upper center) and subsequently poured into a mold (upper right). In the lower register, two workers, one of whom is uncharacteristically obese, present a completed collar (lower left) and to their right are depicted dwarfs shaping and decorating jewelry items (after Andrews 1990: fig. 51).
2.	A stone jewelry mold from Ḥazor Stratum XIV– Late Bronze Age II (after Yadin et al. 1961: pl. 158: 31).

Figure 2

1.	A stone object of uncertain use from unspecified Late Bronze Age levels at Tell Abu Hawam, with two funnel-shaped perforations, possibly used for wire drawing (after Hamilton 1934: 59, fig. 366).
2.	Various types of metal wire (after Lemaigre 1983: fig. 40).
3.	A quartz bead with an oblong, irregularly shaped perforation (after Zelinger and Golani 2005: fig. 5).
4.	Manufacturing techniques for beaded wire. Use of double-edged implement (a) and rolling the wire under a single edge at an oblique angle (b) to make a spiral beaded wire (after Hoffmann and Davidson 1967: fig. 20).
5.	A narrow ribbon or strip of sheet metal is twisted into a spiral tube prior to drawing or smoothing. Under magnification, the wire exhibits a continuous spiral seam (after Ogden 1982: fig. 4: 26).

Figure 2



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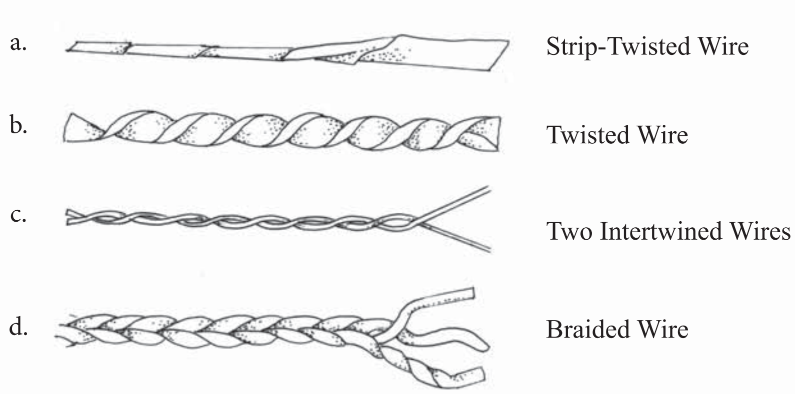

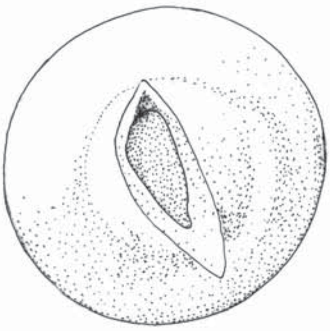

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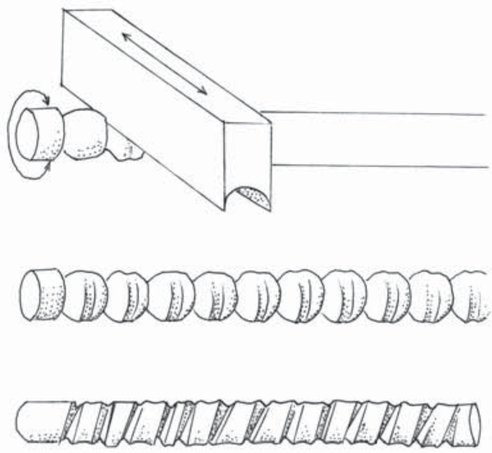

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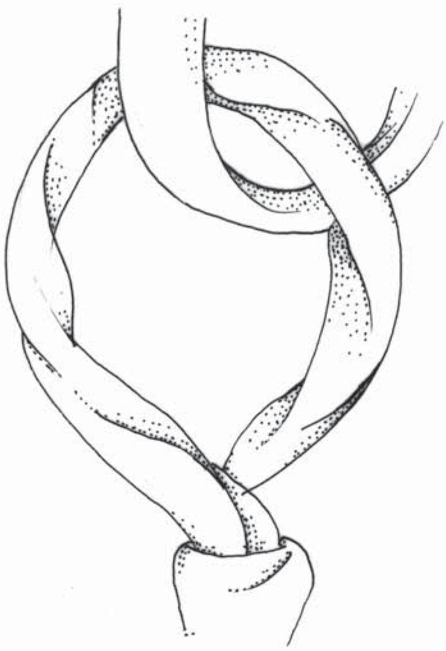

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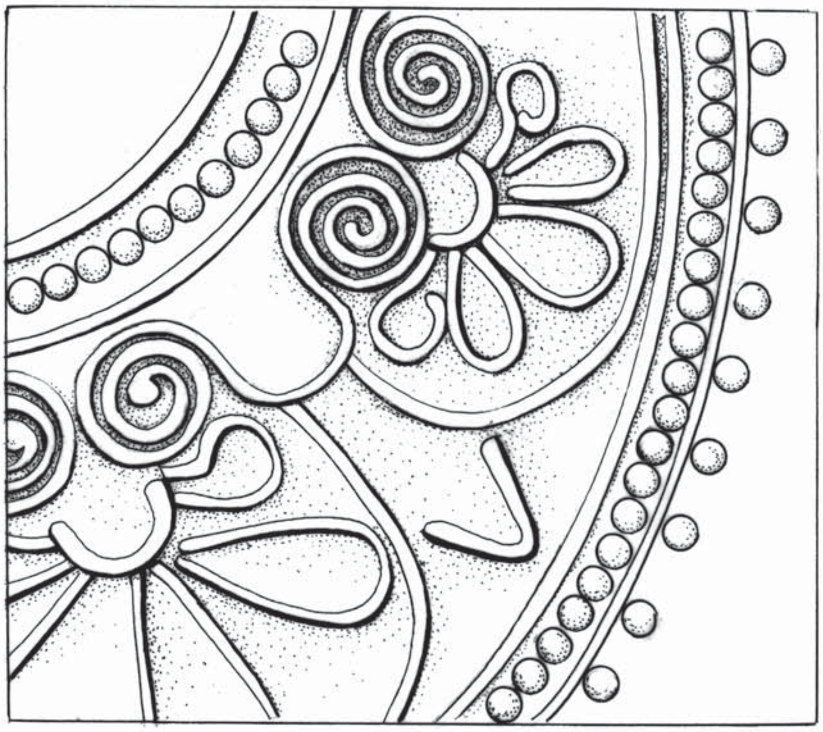
Figure 3

1.	Filigree decoration on a Cypriot earring of the Hellenistic period (after Hoffmann and Davidson 1967: fig. 19). Note the use of plain wire for the filigree decoration, flanked on both sides by beaded wire.
2.	Beating and working sheet metal. Egyptian craftsmen from the Tomb of *Zau*, Old Kingdom (after Ogden 1982: fig. 4: 2).
3.	Beating out sheet metal and heating up gold with the aid of extended blowpipes. From the Old Kingdom, pyramid of King Unas (after Müller and Thiem 1999: fig. 147).
4.	Working sheet metal in the *repoussé* technique. A. The metal may be pressed down into a wooden or metal die, either with tools or by using some kind of semi-rigid material such as wax or lead. B. The metal can be placed over a wax, pitch or lead base, the design then made by a metal punch hit with a hammer. C. The sheet metal may be formed over a design in relief. D. Sheet metal may be hammered over a shallow, sunken design (after Hoffman and Davidson 1967: fig. 10).

Figure 3



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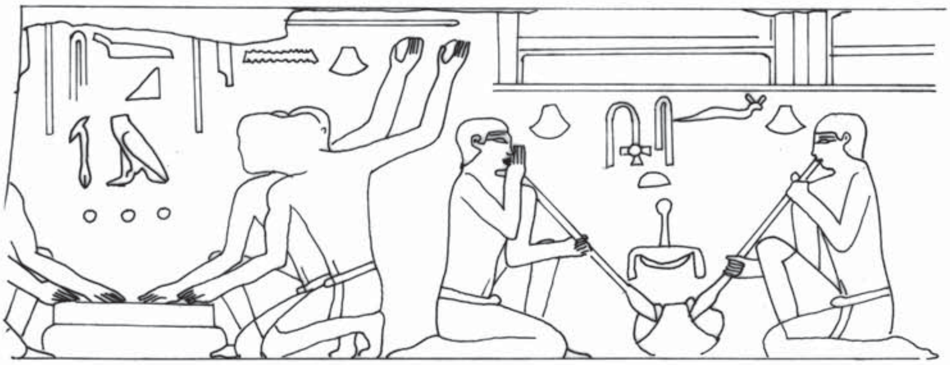

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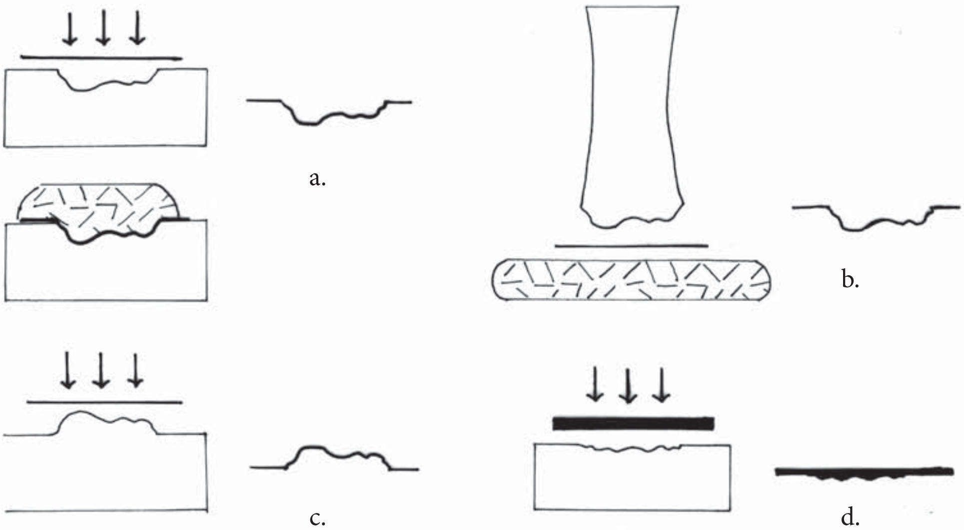

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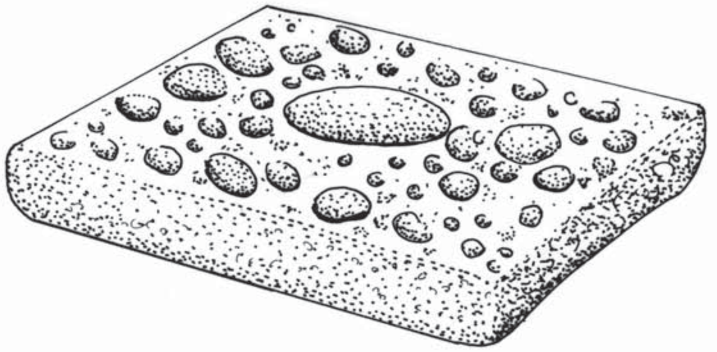
Figure 4

1.	An Islamic jeweler's tool with semi-globular depressions for *repoussé* or for use as a doming block (after Destrée 1983: 174).
2.	Chasing and engraving. A. In chasing the metal is displaced and not removed. B. In engraving the metal is cut out (after Hoffmann and Davidson 1967: fig. 12).
3.	Use and results of chasing and engraving techniques (after Ward et al. 1981: 12).
4.	Diagram illustrating the granulation technique in gold using the colloid hard soldering method. The granules are first glued on to the piece in the desired pattern using a mixture of organic glue and copper salt to hold them in place. The work is then heated. At 100° c the copper salt turns to copper oxide, at 600° c the organic glue turns to carbon, at 850° c the carbon and the oxide combine to form carbon dioxide gas which disperses, at 890° c the copper merges with the gold base and becomes invisible (after Ward et al. 1981: 13).

Figure 4



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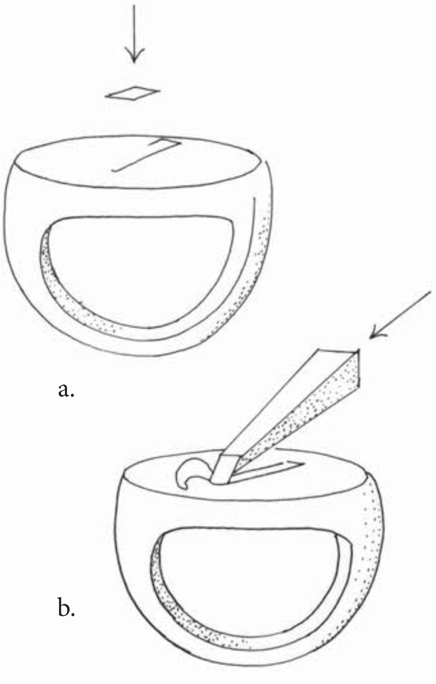

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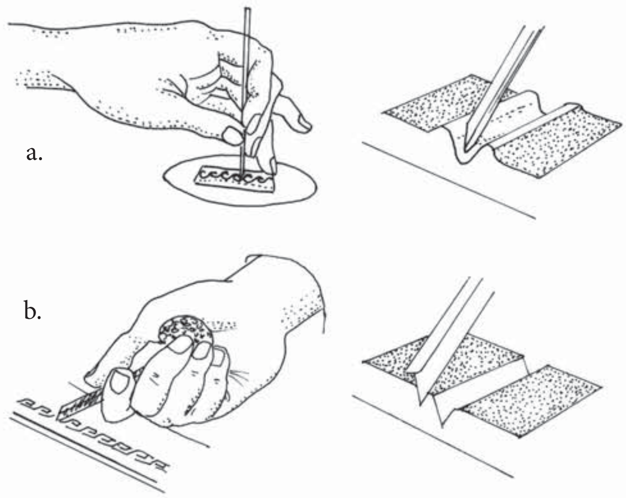

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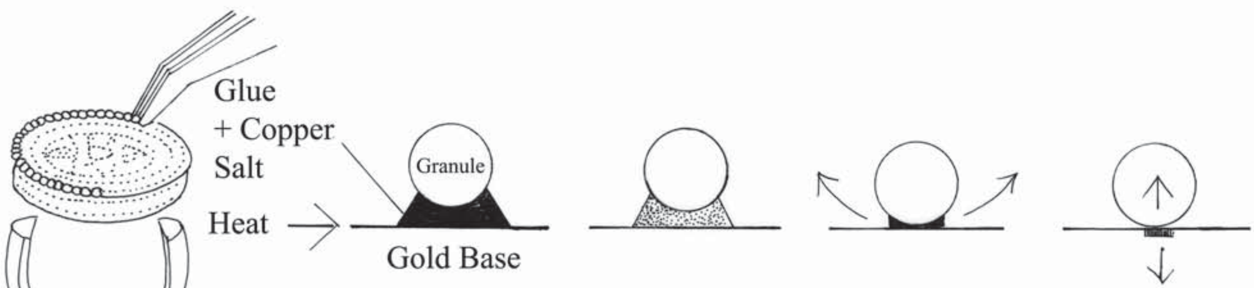

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Figure 5

1.	Stages of fabrication in the modern production of stone beads from Khambat, India (after Roux 1995: 41).
2.	Depiction of a metal spike against which a stone bead is held and tapped with a wood or horn hammer. This technique is still used by Indian bead makers (after Ogden 1982: 144).
3.	A scene from the Tomb of *Ibi*, a provincial nobleman of the Middle Kingdom, showing various stages in the production of stone beads. At left and center, two craftsmen form and polish stone beads by rubbing them against a stone block. At right, two craftsmen operate hand-held drills for perforating the beads, or possibly for polishing them by a turning the bead in a receptacle with an abrasive (after Andrews 1990: 73). The workers hold the drill steady with one hand while the other hand appears to pat the top of the drill handle, suggesting that the perforation was done by glancing blows rather than by a turning motion.

Figure 5

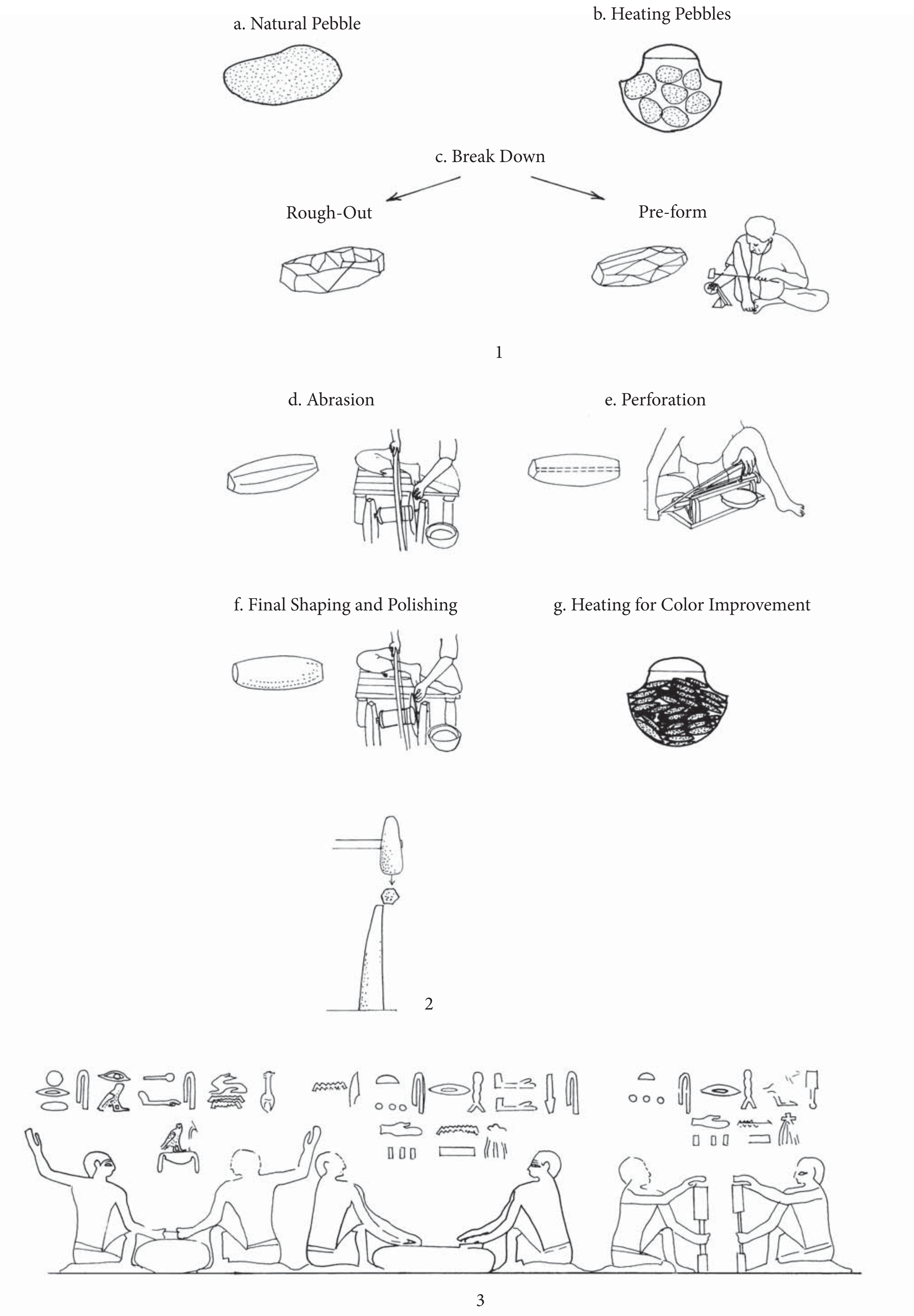

a. Natural Pebble
b. Heating Pebbles
c. Break Down
Rough-Out
Pre-form
1
d. Abrasion
e. Perforation
f. Final Shaping and Polishing
g. Heating for Color Improvement
2
3

Figure 6

1.	A depiction of a bow drill in use from the New Kingdom Tomb of Rekh-Mi-Re in Thebes. Note the conical drill pivot stone held in the left hand. Such stones with a worn deep depression at the wide and flattened end are not uncommon in excavations and may be interpreted as drill pivot stones.
2.	A portion of a wall painting from the Tomb of Sobkhotep (18th dynasty) showing the activities of jewelers and precious metal workers (after Andrews 1990: 76). In the lower two registers, multiple bow drills are drilling beads. At center a workman is forming or polishing stone beads while at lower left another workman is seen stringing a broad collar. At lower right is a goldsmith sitting at the furnace.
3.	A depiction of a bead workshop from the 18th dynasty Tomb of Rekh-Mi-re in Thebes. In the upper register a craftsman operates a triple bow drill while next to him, another worker threads beads onto a multiple string necklace. In the lower register, two more workers are stringing beads while another bows down in obeisance before multiple strings of beads presented to the Tomb owner (after Andrews 1990: fig. 54).

Figure 7

1.	Application of spiral trail decoration on a glass bead formed on a rod. The trails can be left as applied or *marvered* into the bead by rolling it over a smooth and flat surface while the glass was still in a viscous state (after Spaer 2001: fig. 21).
2.	Creation of ‘scalloped’ decoration by dragging a simple tool over the applied threads of the bead while still in a viscous state (after Spaer 2001: fig. 22).
3.	Application of ‘crumb’ decoration on a rod-formed bead while the bead is still in a viscous state. The crumbs could be left as applied or marvered into the bead while the glass was still in a viscous state (after Spaer 2001: fig. 23).
4.	Application of a ‘ribbed’ or ‘fluted’ decoration on a glass bead by use of a double-pronged tool while the glass is still in a viscous state (after Spaer 2001: fig. 24).

Figure 6

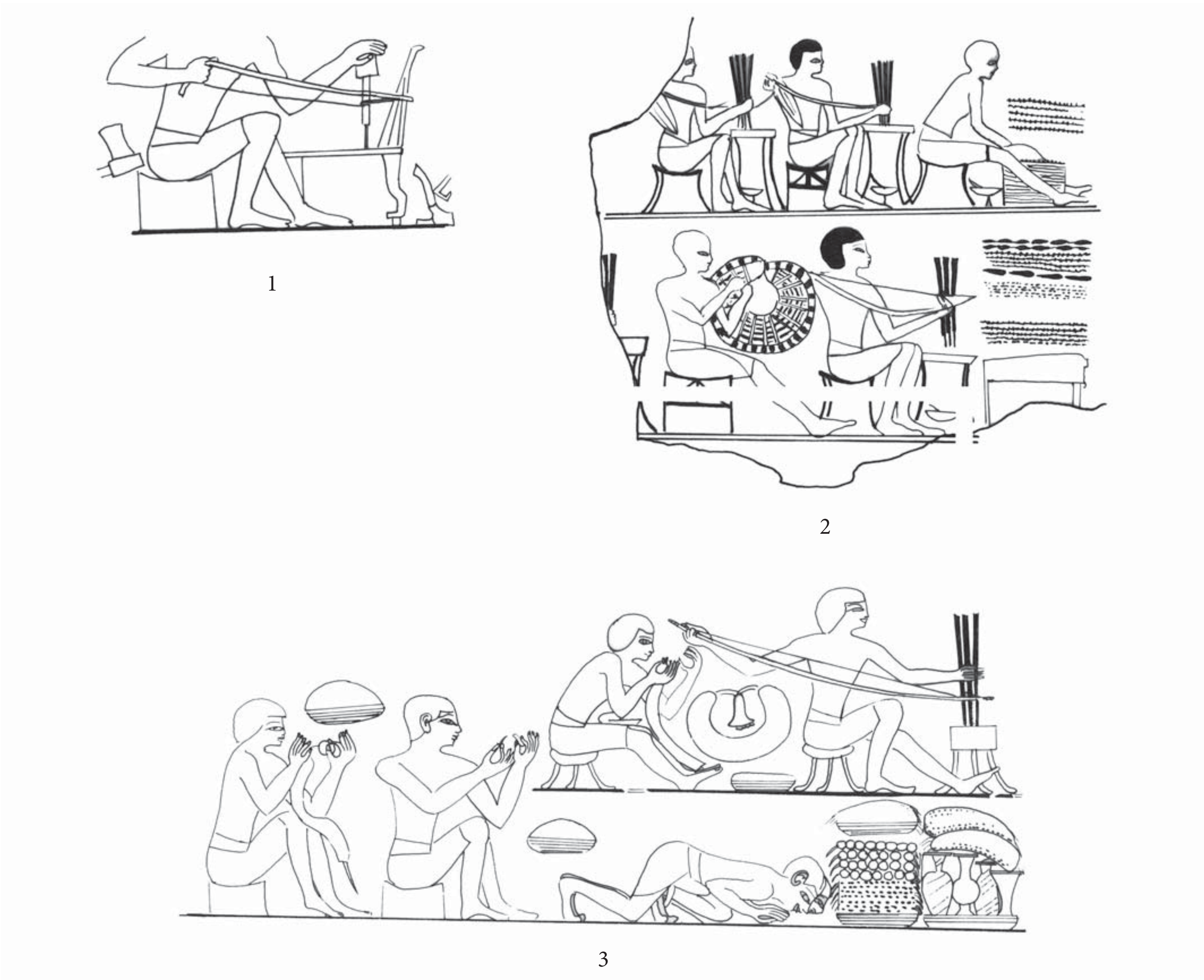


Figure 7

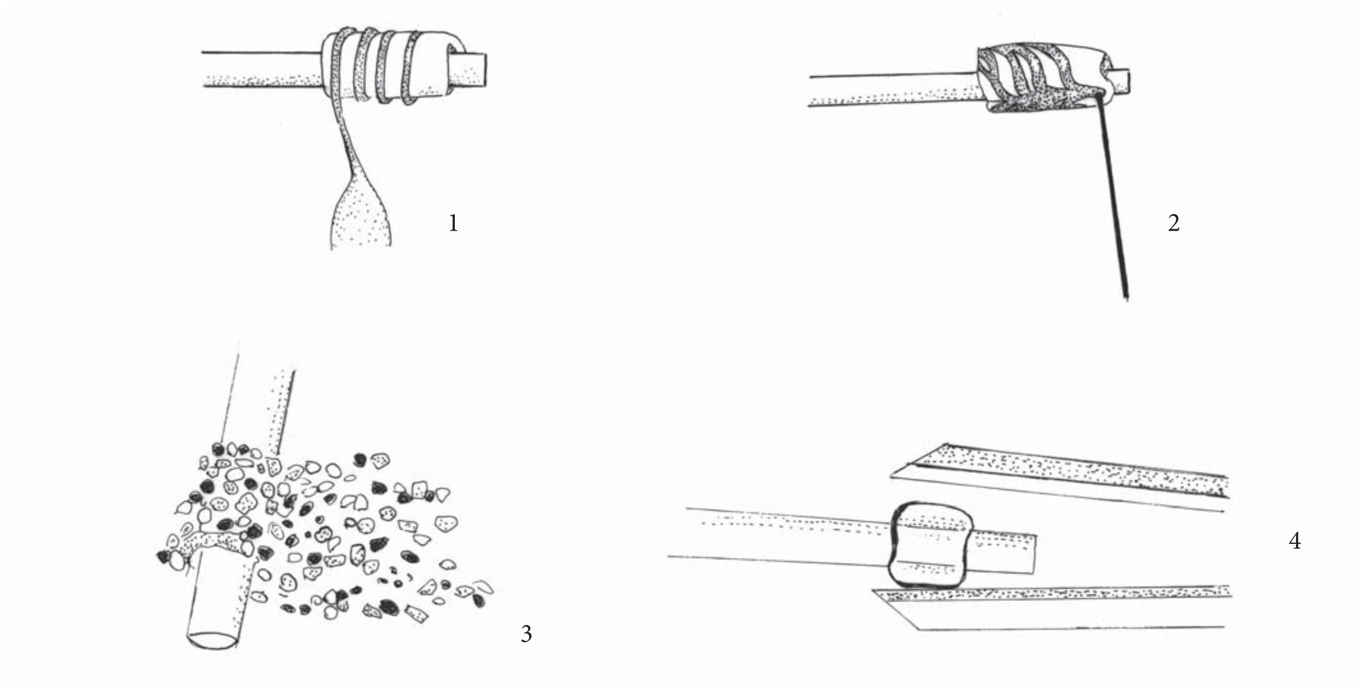


Figure 8 – Earrings
Types I.1, I.1a, I.2a, I.3a-b, I.6a-b, I.7

1	Earring, Solid Lunate Type I.1b, Small, Plain with Short or Long Hoop with Top Closure. Gold. Tell el-ʿAjjul, unclear context from the town, probably MB-LB (after Petrie 1934: pl. 18: 85).
2.	Earring, Solid Lunate Type I.1, Small, Plain. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani 1996a: fig. 6: 1).
3.	Earring, Solid Lunate Type I.1, Small, Plain. Gold. Tel Miqne-Ekron, from Stratum IVA, 11th-10th c. (after Golani forthcoming A).
4.	Earring, Solid Lunate Type I.1, Small, Plain. Electrum. Tel Ashdod, from Stratum XIIb, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.1: 1).
5.	Earring, Solid Lunate Type I.1, Small, Plain. Silver. Akhziv, from Tomb ZR XXIX, 9th-7th c. (after Dayagi-Mendels 2002: fig. 4.21: 41).
6.	Earring, Solid Lunate Type I.1, Small, Plain. Silver with glass bead. Akhziv, from Tomb ZR II, 10th-7th c. (after Dayagi-Mendels 2002: fig. 4.1: 3).
7.	Earring, Solid Lunate Type I.1a, Small, Plain with Elongated Hoop. Silver. Ashqelon, from Tomb, 5th c. (after Golani 1996b: fig. 4: 2).
8.	Earring, Solid Lunate Type I.1a, Small, Plain with Elongated Hoop. Silver. Akhziv, from Tomb ZRII, 10th-7th c. (after Dayagi-Mendels 2002: fig. 4.1: 2).
9.	Earring, Solid Lunate Type I.1a, Small, Plain with Elongated Hoop. Copper alloy. Lachish, from Dwelling or Burial Cave 515, from unclear date (after Tufnell 1953: pl. 56: 20).
10.	Earring, Solid Lunate Type I.1a, Small, Plain with Elongated Hoop. Copper alloy. Lachish, from Burial Cave 4005, 10th-6th c. (after Tufnell 1953: pl. 57: 42).
11.	Earring, Solid Lunate Type I.2a, Wide Plain. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 10: 2).
12.	Earring, Solid Lunate Type I.2a, Wide Plain. Copper alloy. Tell en-Naṣbeh, from Tomb 3, 8th-7th c. (after McCown 1947: pl. 112: 28).
13.	Earring, Solid Lunate Type I.2a, Wide Plain. Silver. Tell el-Farʿah (S), from Tomb 202, 10th-8th c. (after Petrie 1930: pl. 42: 309).
14.	Earring, Solid Lunate Type I.2a, Wide Plain. Silver. Tell el-Farʿah (S), from Tomb 229, 10th-8th c. (after Petrie 1930: pl. 39: 446).
15.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Gold. Megiddo, from Stratum VIIA, 14th-12th c. (after Loud 1948: pl. 225: 18
16.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Gold. Deir el-Balaḥ, from Tomb 114, 14th-15th c. (after Dothan 1979: fig. 50).
17.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 10: 3).
18.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Gold, Assur, from Late Assryian Tomb 1, 7th c. (after Maxwell Hyslop 1971: fig. 129).
19.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Silver. Kamid el-Loz, from Grave 14, 6th-4th c. (after Hachmann and Penner 1999: pl. 16: 10).
20.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Silver. From Jordanian Hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 22: 137).
21.	Earring, Solid Lunate Type I.3b. Silver. Yama, from Cave 1 Burial repository, 6th-4th c. (after Gal and Muqari 2002: fig. 9: 12-14).
22.	Earring, Solid Lunate Type I.3b. Silver. Ḥazor, from Stratum V, 8th c. (after Yadin et al. 1961: pl. 253: 17).
23.	Earring Type I.3b, Small, Plain with Elongated Hoop and Decorated. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 12).
24.	Earring, Solid Lunate Type I.3a, Small Plain with Short Hoop and Decorated. Silver. Tell Jemmeh, from unclear context, 6th-5th c.? (after Petrie 1928: pl. 20: 48).
25.	Depiction of a Neo-Assyrian wearing what appears to be a Type I.3a Earring. Til Barsip, 8th-7th c. (after Maxwell-Hyslop 1971: fig. 131a).
26.	Earring, Solid Lunate Type I.6a, Multiple-Lobed 'Sling'. Gold. Tell el-ʿAjjul, from hoard, 16th-15th c. (after Petrie 1934: pl. 18: 79).
27.	Earring, Solid Lunate Type I.6a, Multiple-Lobed 'Sling'. Gold. Tel Dan, from Stratum VIIB 'Mycenean' Tomb, 14th-13th c. (after Biran and Ben-Dov 2002: fig. 2.135).
28.	Earring, Solid Lunate Type I.6a, Multiple-Lobed 'Sling'. Electrum. Wadi el-Makkuk, from hoard, 11th-10th c. (after Sass 2002: fig. 3).
29.	Earring, Solid Lunate Type I.6a, Multiple-Lobed 'Sling'. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 8).
30.	Earring, Solid Lunate Type I.6a, Multiple-Lobed 'Sling'. Silver. Tell el-Farʿah (S), from Tomb 914, 13th-11th c. (after Starkey and Harding 1932: pl. 48: 19).
31.	Earring, Solid Lunate Type I.6a, Multiple-Lobed 'Sling'. Silver. Kamid el-Loz, from Tomb, from Grave 13, 6th-4th c. (after Hachmann and Penner 1999: pl. 16: 6).
32.	Earring, Solid Lunate Type I.6b, 'Sling'-Flattened Lunate with Granular Decoration. Silver. Yama, from Cave 1 Burial repository, 6th-4th c. (after Gal and Muqari 2002: fig. 9: 7-8).
33.	Earring, Solid Lunate Type I.7, with Elongated Hoop and Sculpted Crescent. Silver. Lachish, from Burial Cave 1002, 8th c. (after Tufnell 1953: pl. 57: 7).

Figure 8

(Scale 1: 1, except for no. 25)

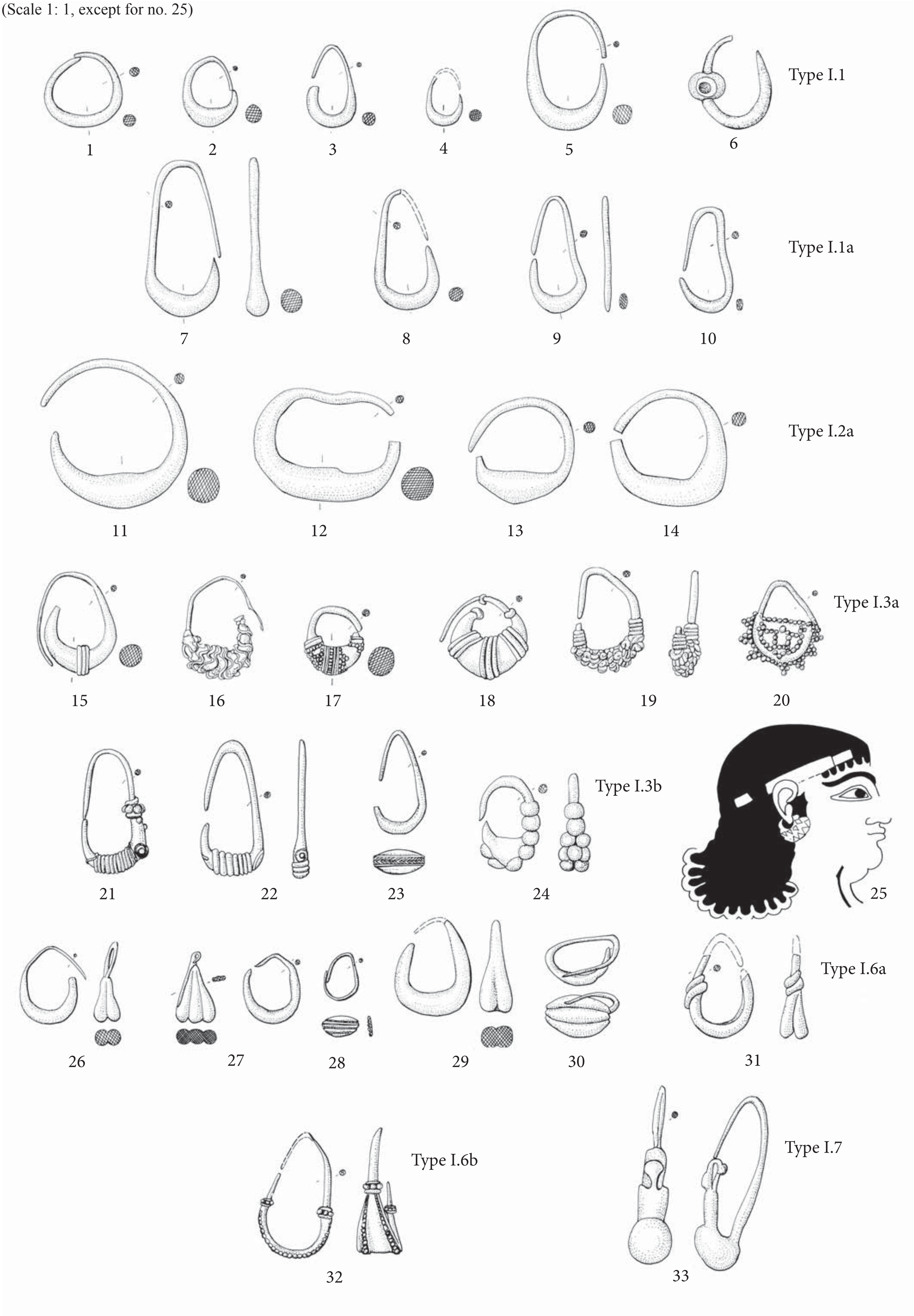


Figure 9 – Earrings
Types II.1a-b

1.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Kamid el-Loz, from Grave 69, 5th c. (after Poppa 1978: pl. 20: 2).
2.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. From Jordanian hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 22: 141).
3.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Copper alloy. Lachish, from Burial Cave 1002, 8th c. (after Tufnell 1953: pl. 57: 8).
4.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Kamid el-Loz, from Grave 2a, 5th c. (after Poppa 1978: pl. 4: 12).
5.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Kamid el-Loz, from Grave 2a, 5th c. (after Poppa 1978: pl. 4: 13).
6.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Galʽed, from tumulus Tomb, 6th-4th c. (after Mankind in the Galʽed Hills 2003: 11).
7.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Jerusalem, Ketef Hinnom, from Cave 25 Burial repository, 7th-5th c. (after Barkay 1986: 27).
8.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Jerusalem, Ketef Hinnom, from Cave 25 Burial repository, 7th-5th c. (after Barkay 1986: 27).
9.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Kamid el-Loz, from Grave 76, 5th c. (after Poppa 1978: pl. 21: 2).
10.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Kamid el-Loz, from Grave 76, 5th c. (after Poppa 1978: pl. 21: 3).
11.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
12.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
13.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
14.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. From ‘Ammonite’ Tomb, 8th-4th c. (after Der Königsweg: 193).
15.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 10: 5).
16.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 10: 6).
17.	Earring, Solid Lunate with Fixed Attachment Type II.1a, with Hollow Drop-Shaped Attachment. Silver. Jerusalem, Ketef Hinnom, from Cave 25 Burial repository, 7th-5th c. (after Barkay 1986: 27).
18.	Earring, Solid Lunate with Fixed Attachment Type II.1b, with Solid Drop-Shaped Attachment. Gold. Tell el-ʽAjjul, from unclear context, 15th-13th c. (after Petrie 1932: pl. 3: 17).
19.	Earring, Solid Lunate with Fixed Attachment Type II.1b, with Solid Drop-Shaped Attachment. Gold. Tell el-ʽAjjul, from unclear context, 15th-13th c. (after Petrie 1932: pl. 3: 18).
20.	Earring, Solid Lunate with Fixed Attachment Type II.1b, with Solid Drop-Shaped Attachment. Silver. From Jordanian Hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 22: 130).
21.	Earring, Solid Lunate with Fixed Attachment Type II.1b, with Solid Drop-Shaped Attachment. Silver. Samaria, from Period VIII, 7th c. (after Crowfoot, Crowfoot and Kenyon 1957: fig. 105: 12).
22.	Earring, Solid Lunate with Fixed Attachment Type II.1b, with Solid Drop-Shaped Attachment. Silver. Zinjirli, 8th c. (after von Luschan 1943: pl. 45: g).
23.	Three-lobed earring. Silver. Tell Ḥalaf (after Hrouda 1962: pl. 33: 61-63).
24.	Statuette of a man wearing a three-lobed earring from ʽIrjan in Jordan (see Bienkowski 1991: fig. 44, after *ADAJ* 1970: pl. 27).

Figure 9
(Scale – 1: 1, except for no. 24)

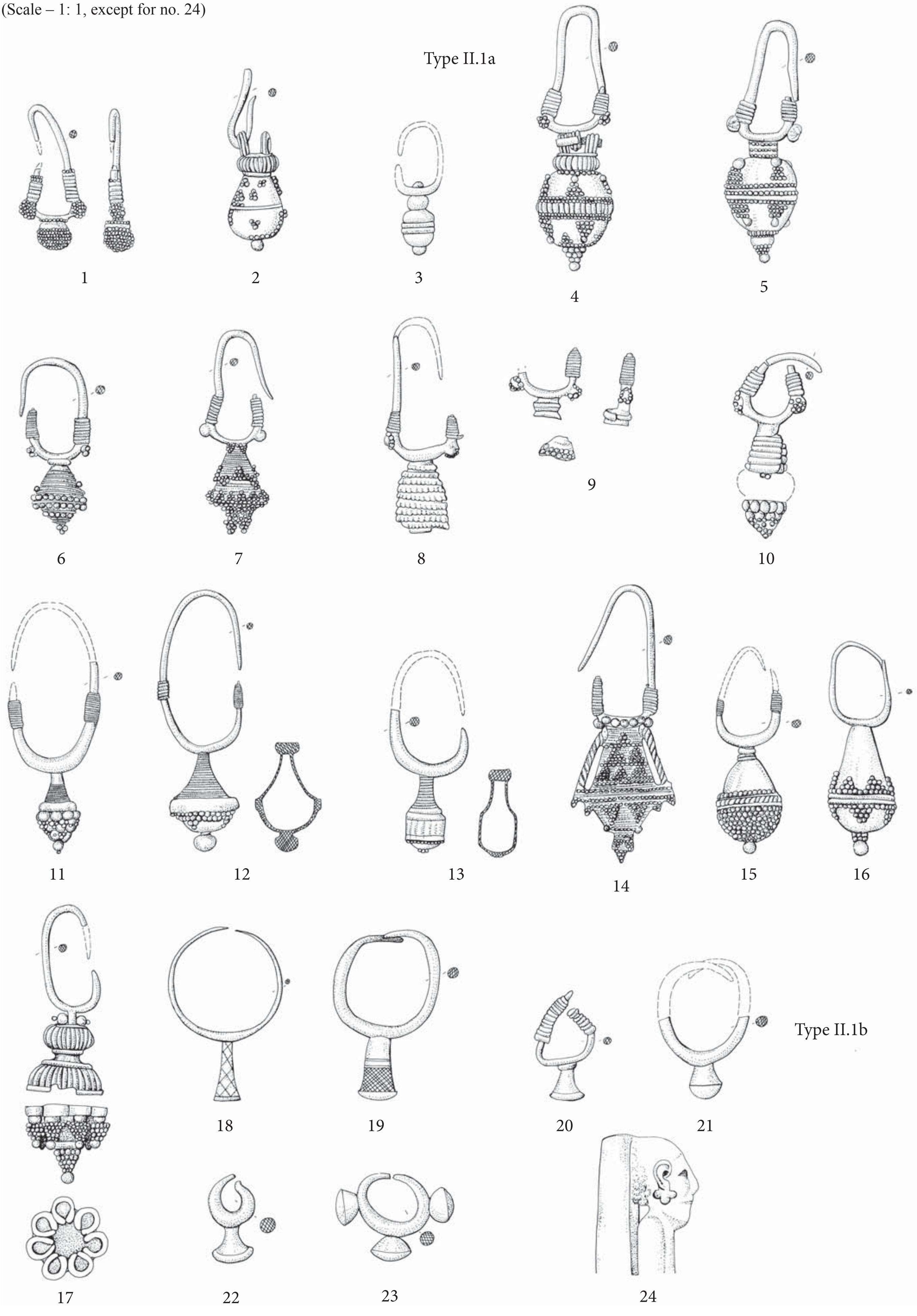


Figure 10 – Earrings
Types II.2, II.3, II.4, II.5

1.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Gold. Gezer, from Burial Cave 28 II, 19th-18th c. (after Macalister 1912c: pl. 31: 14).
2.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Gold. Tell el-Farʻah (S), from Tomb 238, 10th-8th c. (after Petrie 1930: pl. 42: 310).
3.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Gold. Tell el-Farʻah (S), from Tomb 202, 10th-8th c. (after Petrie 1930: pl. 42: 332).
4.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Eshtemoʻa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 3).
5.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Eshtemoʻa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 5).
6.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Eshtemoʻa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 7).
7.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Copper alloy. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1958: pl. 54: 1).
8.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1958: pl. 54: 2).
9.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1958: pl. 54: 3).
10.	Earring, Solid Lunate with Fixed Attachment Type II.2 with Solid Hemispherical, Globular or Lenticular Attachment. Copper alloy. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1958: pl. 54: 4).
11.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Copper alloy. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1958: pl. 54: 5).
12.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 10: 4).
13.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
14.	Earring, Solid Lunate with Fixed Attachment Type II.2, with Solid Hemispherical, Globular or Lenticular Attachment. Gold with carnelian bead. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
15.	Earring, Solid Lunate with Fixed Attachment Type II.3, with Cubical Attachment. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 10: 7).
16.	Earring, Solid Lunate with Fixed Attachment Type II.3, with Cubical Attachment. Silver. Akhziv, from Tomb ZR XXIX, 9th-7th c. (after Dayagi-Mendels 2002: fig. 4.21: 61).
17.	Earring, Solid Lunate with Fixed Attachment Type II.4, with Platform Attachment and Pyramids of Granules. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
18.	Earring, Solid Lunate with Fixed Attachment Type II.4, with Platform Attachment and Pyramids of Granules. Silver. From Jordanian Hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 12: 138).
19.	Earring, Solid Lunate with Fixed Attachment Type II.4, with Platform Attachment and Pyramids of Granules. Silver. From Jordanian Hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 12: 139).
20.	Earring, Solid Lunate with Fixed Attachment Type II.4, with Platform Attachment and Pyramids of Granules. Silver. From Jordanian Hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 12: 140).
21.	Earring, Solid Lunate with Fixed Attachment Type II.5, with Hollow, Fan-Shaped Attachment and Pyramids of Granules. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
22.	Earring, Solid Lunate with Fixed Attachment Type II.5, with Hollow, Fan-Shaped Attachment and Pyramids of Granules. Silver. Akhziv, from Tomb No. 1, 9th-7th c. (after Mazar 2004: fig. 24: 21).

Figure 10
(Scale – 1: 1)

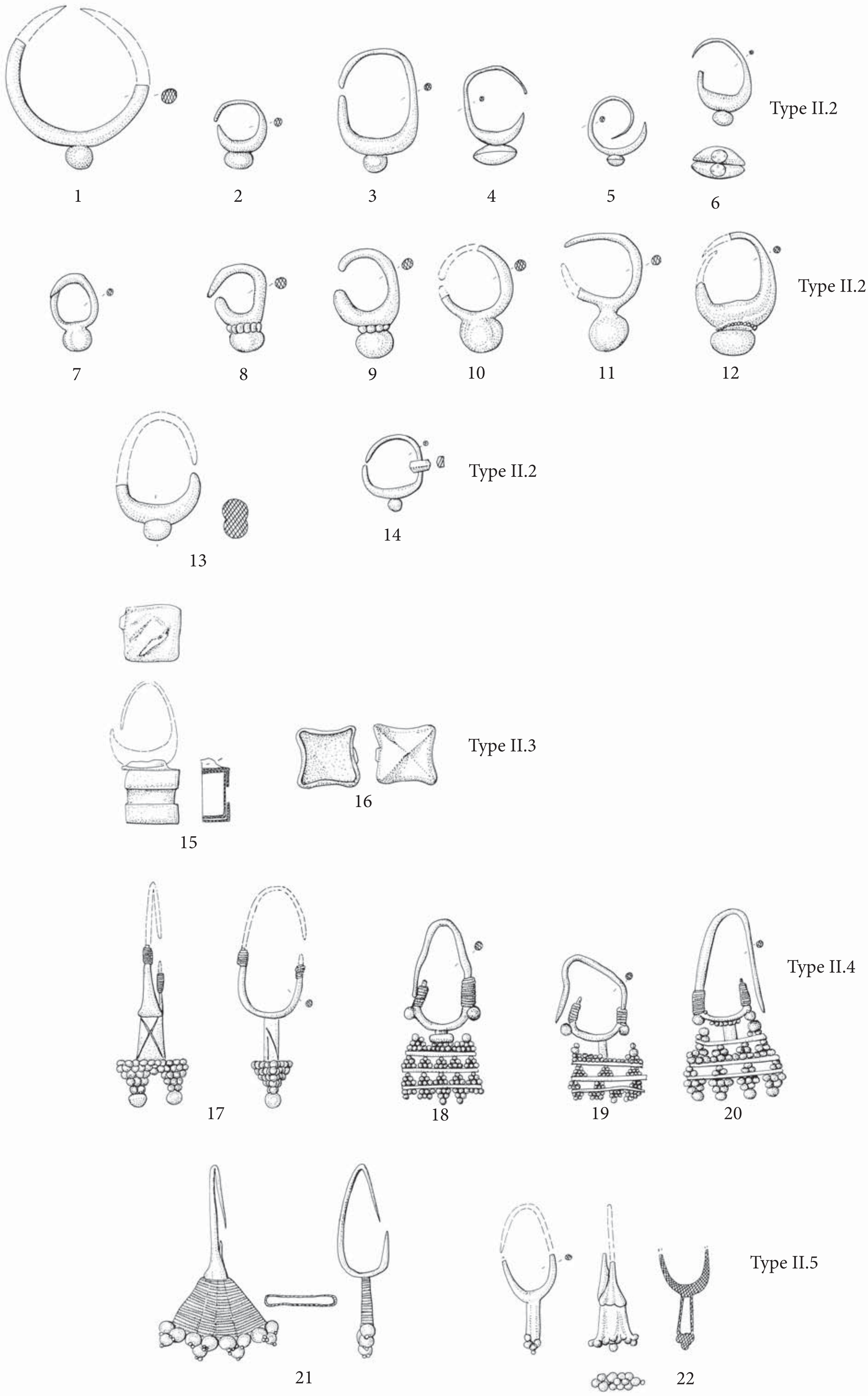


Figure 11 / 1 – Earrings
Types II.6a-c, II.7, II.8a-b

1.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Electrum. Lachish, from Burial Cave 4004, 16th-14th c. (after Tufnell 1958: pl. 25: 15).
2.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Gold. Tell el-ʿAjjul, from hoard, 15th c. (after Petrie 1934: pl 18: 126).
3.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Gold. Tell el-ʿAjjul, from hoard, 15th c. (after Petrie 1934: pl 18: 103).
4.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Silver. Tell el-Farʿah (S), from Tomb 961, 12th-11th c. (after Starkey and Harding 1932: pl. 50: 94).
5.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Gold. Tell el-Farʿah (S), from Tomb 605, 11th-9th c. (after Petrie 1930: pl. 33: 382).
6.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 10).
7.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Copper alloy. Lachish, from Burial Cave 4005, 10th-6th c. (after Tufnell 1953: pl. 57: 41).
8.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Silver. Tel ʿIra, from Tomb 14, 8th-7th c. (after Freud 1999: fig. 8.2: 7).
9.	Earring, Solid Lunate with Fixed Attachment Type II.6a, with Attachment of Solid Granule Cluster. Gold. Kamid el-Loz, from Grave 129, 6th-4th c. (after Hachmann and Penner 1999: pl. 8: 10).
10	Fragment of stone mold for a Type II.6a Earring, Gezer (after Macalister 1912c: pl. 136: 21).
11.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with Attachment of Hollow Granule Cluster. Silver. Tell el-Farʿah (S), from Tomb 725, 7th-6th c. (after Petrie 1930: pl. 48: 572).
12.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with attachment of hollow granule cluster. Silver, Tell el-Farʿah (S), from Tomb 754, 7th-6th c. (after Petrie 1930: pl. 48: 573).
13.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with Attachment of Hollow Granule Cluster. Silver. Tel ʿIra, from Tomb 23, 6th c. (after Freud 1999: pl. 8: 2: 2).
14.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with Attachment of Hollow Granule Cluster. Silver. Tel ʿIra, from Tomb 23, 6th c. (after Freud 1999: pl. 8: 2: 4).
15.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with Attachment of Hollow Granule Cluster. Gold. Lachish, from fill of great shaft, 6th-5th c. (after Shea and Maxwell-Hyslop 1979: fig. 1).
16.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with Attachment of Hollow Granule Cluster. Silver. Deve Hüyük, from Tomb 19, 5th c. (after Moorey 1980: fig. 13: 301-302).
17.	Earring, Solid Lunate with Fixed Attachment Type II.6b, with Attachment of Hollow Granule Cluster. Silver. Kamid el-Loz, from Grave 4, 6th-4th c. (after Poppa 1978: pl. 5: 10).
18.	Earring, Solid Lunate with Fixed Attachment Type II.6c, with Attachment of Solid Granule Cluster and Filigree Wire Decoration. Gold. Tawilan, from hoard, 10th-9th c. (after Ogden 1995: figs. 8.4, 8.17).
19.	Earring, Solid Lunate with Fixed Attachment Type II.7, with Ankh-Shaped Form. Silver. Akhziv, from Tomb ZR XIX 8th c. (after Dayagi-Mendels 2002: fig. 4.15: 6).
20.	Earring, Solid Lunate with Fixed Attachment Type II.7, with Ankh-Shaped Form. Silver. Sarafand, from Tomb 25, 8th c. (after Culican 1978: fig. 4).
21.	Earring, Solid Lunate with Fixed Attachment Type II.8a, with Attachment of Row of Granules. Gold. Tell Jemmeh, from hoard (?), 12th (possibly 10th) c. (after Petrie 1928: fig. 1: 11).
22.	Earring, Solid Lunate with Fixed Attachment Type II.8a, with Attachment of Row of Granules. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 16: 11).
23.	Earring, Solid Lunate with Fixed Attachment Type II.8a, with Attachment of Row of Granules. Gold. Tawilan, from hoard, 10th-9th c. (after Ogden 1995: fig. 8.21).
24.	Earring, Solid Lunate with Fixed Attachment Type II.8a, with Attachment of Row of Granules. Silver. Lachish, from Burial Cave 1002, 8th c. (after Tufnell 1953: pl. 57: 10).
25.	Earring, Solid Lunate with Fixed Attachment Type II.8b, with Attachments of Perpendicular Rows of Granules. Gold. Tawilan, from hoard, 10th-9th c. (after Ogden 1995: fig. 8.22).
26.	Earring, Solid Lunate with Fixed Attachment Type II.8b, with Attachments of Perpendicular Rows of Granules. Gold. Lefkandi, from Tomb 5, 10th-9th c. (after Higgins 1980: pl. 171: 5,11).

Figure 11 / 1
(Scale – 1: 1)

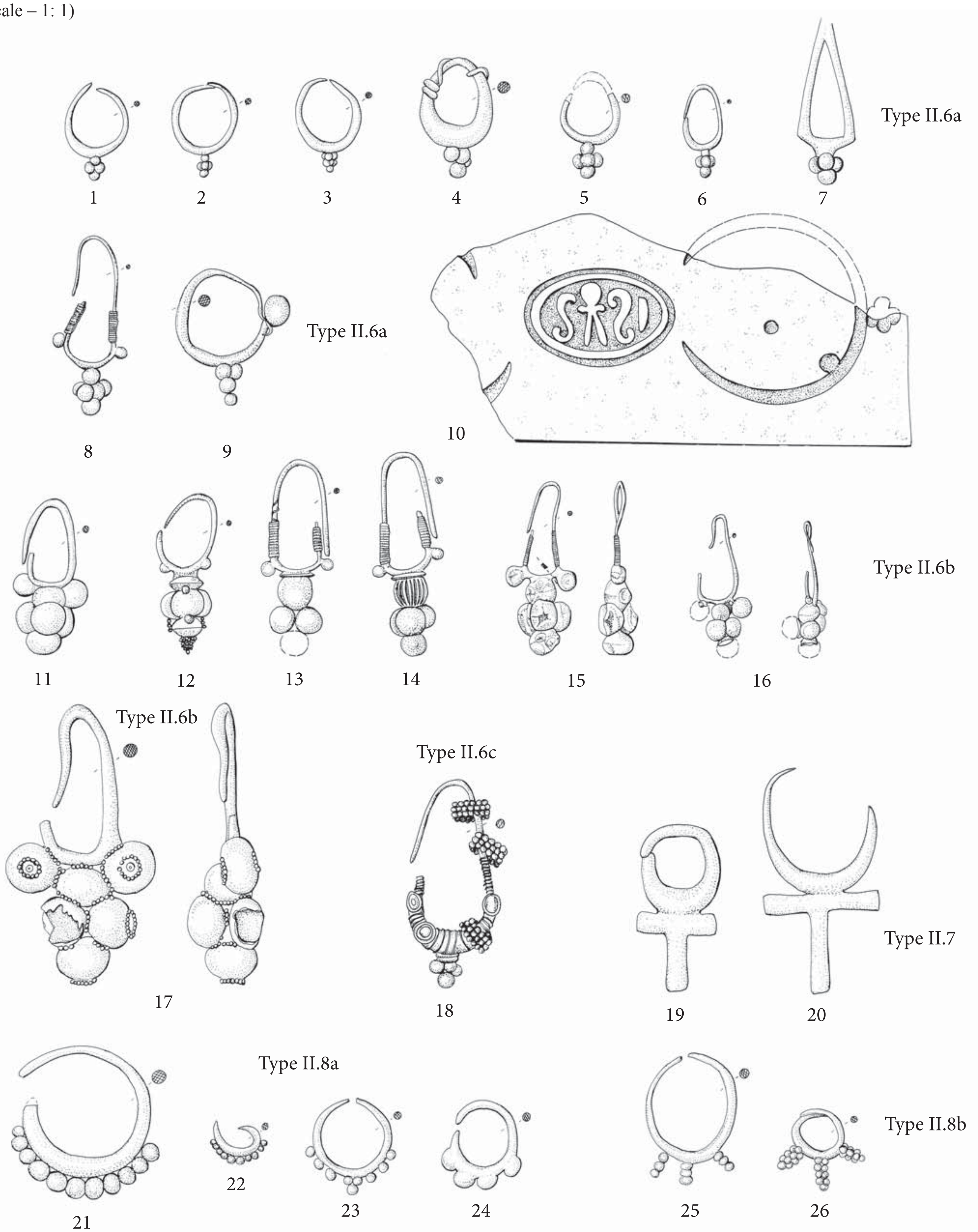


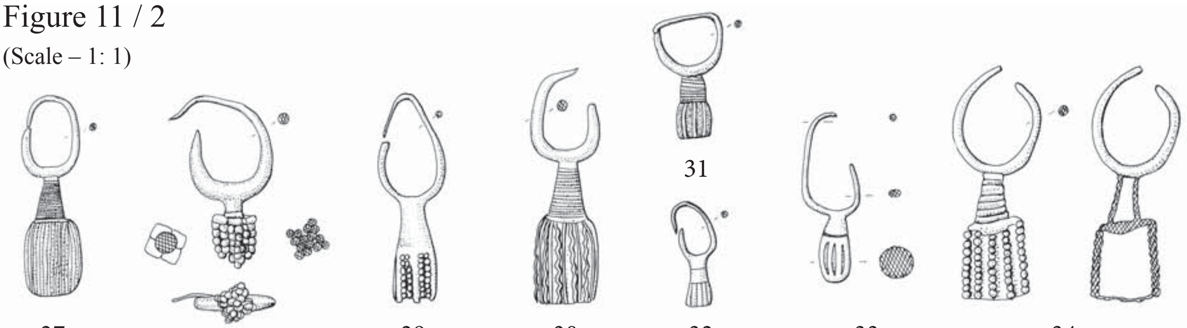
Figure 11 / 2 – Earrings
Type II.9

27.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold. Tell el-Farʻah (S), from Tomb 241, 10th-9th c. (after Petrie 1930: pl. 43: 514).
28.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold/Electrum. Wadi el-Makkuk, from hoard, 11th-10th c. (after Sass 2002: fig. 2).
29.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold. Tell el-Farʻah (S), from Tomb 222, 11th-10th c. (after Petrie 1930: pl. 33: 368).
30.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold. Tell el-Farʻah (S), from Tomb 518, 11th-9th c. (after Petrie 1930: pl. 33: 384).
31.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold. Tell el-Farʻah (S), from Tomb 605, 11th-9th c. (after Petrie 1930: pl. 33: 381).
32.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold. Tell el-Farʻah (S), from Tomb 647, 11th-10th c. (after Petrie 1930: pl. 33: 345).
33.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Copper alloy. Timna, from Temple, 13th-11th c. (after Rothenberg 1988: fig. 55: 15).
34.	Earring, Solid Lunate with Fixed Attachment Type II.9, with 'Tassel' Attachment. Gold. Tawilan, from hoard, 10th-9th c. (after Ogden 1995: fig. 8.4).

Figure 12 – Earrings
Types III.1a, III.2

1.	Earring, Solid Lunate with Pendant Type III.1a, with Hollow Lotus Pendant. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 11: 1).
2.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 11: 2).
3.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 11: 3).
4.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Gold. Cyprus, from a tomb (after Myres 1914: pl. 27).
5.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Gold. Carthage, from a tomb (after Quillard 1979: pl. 8: no. 5b).
6.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Silver. Tharros, from Tomb 32, 7th-5th c. (after Pisano 1987: pl. 38:c).
7.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Silver. Cyprus, from Tomb 186 Ayios Nicolaos, 5th c. (after Karageorghis 1984: fig. 58a).
8.	Earring, Solid Lunate with Pendant Type III.2, with Basket Pendant. Gold. Berlin Museum, see note no. 172 (after Culican 1978: pl. I:a-b).
9.	Distribution of Basket Pendants throughout the Mediterranean (after Golani and Sass 1998: fig. 12).
10.	Two bronze objects from the Beirut region (after Seyrig 1959).

Figure 11 / 2
(Scale – 1: 1)

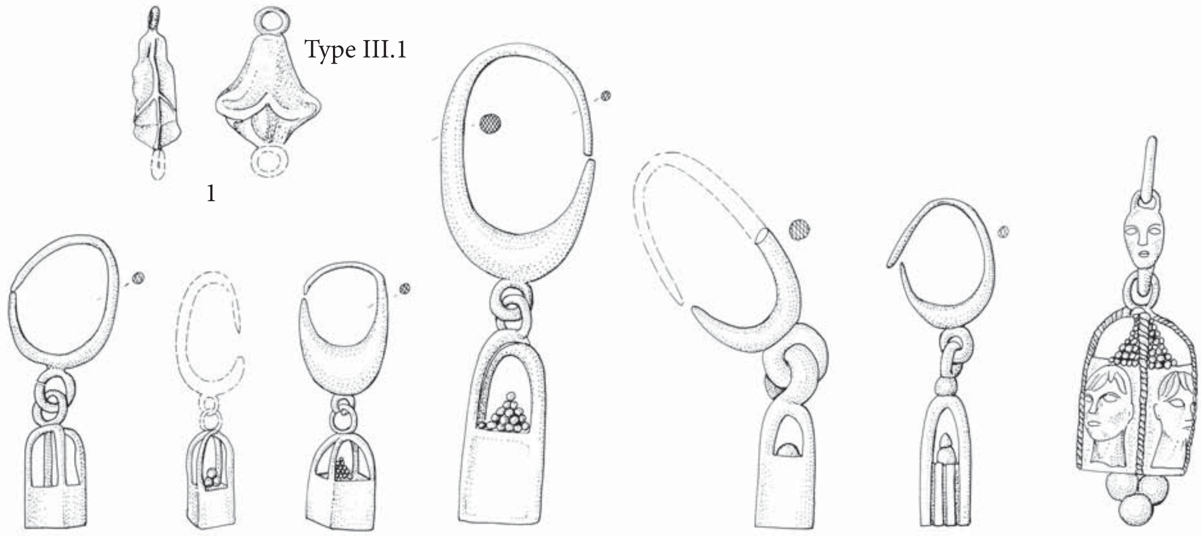


27 28 29 30 31 32 33 34

Type II.9

Figure 12 (Scale – 1: 1, no. 10 Scale 1: 4)

Type III.1



1

2 3 4 5 6 7 8

Type III.2

9

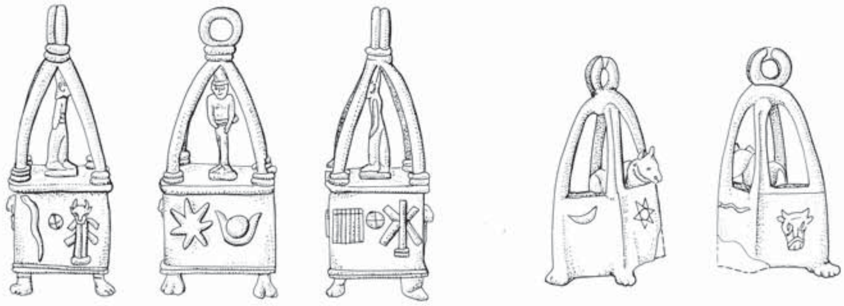


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Figure 13 – Earrings
Types III.2a, III.4, Type IV

1.	Earring(?), Solid Lunate with Pendant Type III.2a, with Prototype (?) of Basket Pendant. Silver. Tel Beth-Shan, Southern Temple, 11th-10th c. (after Rowe 1940: pl. 30: 47).
2.	Earring(?), Solid Lunate with Pendant Type III.2a, with Prototype (?) of Basket Pendant. Agate and copper alloy. Tel Beth-Shan, Southern Temple, 11th-10th c. (after Rowe 1940: pl.30: 46).
3.	Earring(?), Solid Lunate with Pendant Type III.2a, with Prototype (?) of Basket Pendant. Tooth and copper alloy wire. Tel Miqne-Ekron, Stratum IVA2, 11th-10th c. (after Golani forthcoming A).
4.	Earring(?), Solid Lunate with Pendant Type III.2a, with Prototype (?) of Basket Pendant. Gold. Tell el-Farʽah (S), from Tomb 229, 10th-8th c. (Petrie 1930: pl. 39: 452).
5.	Earring, Solid Lunate with Pendant Type III.4, with Twisted Wire Pendant. Silver. Akhziv, from Tomb ZR XVII, 10th-6th c. (after Dayagi-Mendels 2002: fig. 4.14: 27).
6.	Earring, Solid Lunate with Pendant Type III.4, with Twisted Wire Pendant. Gold. Tharros, from Tomb 23, 6th-3rd c. (after Pisano 1987: pl. 119:a.23/7).
7.	Earring, Composite Type IV.1, with Attachment and Pendant. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 11: 4).
8.	Earring, Composite Type IV.1, with Attachment and Pendant. Gold. Tharros, from Tomb 6, 6th-5th c. (after Pisano 1987: pl. 38:b).
9.	Earring, Composite Type IV.1, with Attachment and Pendant. Gold. Cadiz, from Tomb 2, 7th-6th c. (after Perdigones Moreno et al. 1990: figs. 34, 37: 2).

Figure 13
(Scale – 1: 1)

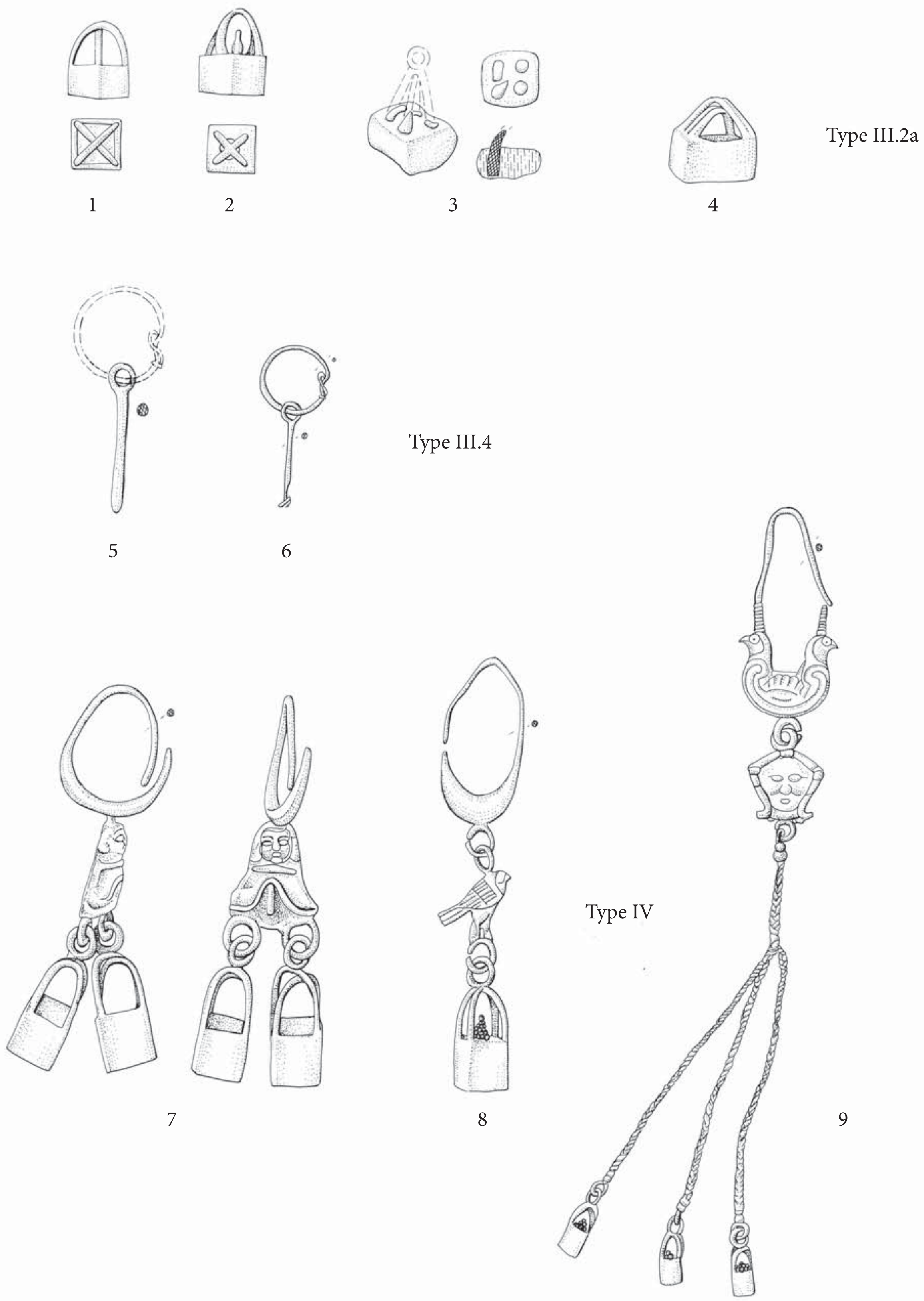


Figure 14 – Earrings
Types VI, VII.1, VII.2

1.	Earplug Type VI, Conical or Mushroom-Shaped. Ivory. Tel Miqne-Ekron, from Stratum IVA-B cache, 11th-10th c. (after Dothan 1998).
2.	Earplug Type VI, Conical or Mushroom-Shaped. Faience. Tel Miqne-Ekron, from Stratum IVA-B cache, 11th-10th c. (after Dothan 1998).
3.	Earplug Type VI, Conical or Mushroom-Shaped. Faience or Egyptian Blue. Beth-Shemesh, from Tomb 1, 14th-11th c. (after Grant 1927: 187: 812).
4.	Earplug? Type VI, Conical or Mushroom-Shaped. Faience. Megiddo, from Stratum III, 8th-7th c. (after Lamon and Shipton 1939: pl. 101: 14).
5.	Earplug? Type VI, Conical or Mushroom-Shaped. Stone. Gezer, from unclear context, 'Fourth Semitic Period' (after Macalister 1912c: fig. 281b).
6.	Earring, Hollow Lunate Type VII.1, Plain Hollow Lunate. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 24).
7.	Earring, Hollow Lunate Type VII.1, Plain Hollow Lunate. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 24).
8.	Suggested method of manufacture for Type VII.1 earrings from Eshtemoʿa (after Yeivin 1990: fig. 24).
9.	Earring, Hollow Lunate Type VII.1, Plain Hollow Lunate. Silver. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 54: 6).
10.	Earring, Hollow Lunate Type VII.1, Plain Hollow Lunate. Gold. Tell el-Farʿah (S), from Tomb 240, 10th-8th c. (after Petrie 1930: pl. 38: 225).
11.	Earring, Hollow Lunate Type VII.1 Plain Hollow Lunate. Copper alloy. Tel Michal, from Tomb 2001, 6th-4th c. (after Herzog and Levy 1999: fig. 2: 19).
12.	Earring, Hollow Lunate Type VII.2, Decorated Hollow Lunate. Silver. Tel Ḥalif, from Tomb 20, 8th c. (after Borowski 1994: fig. 7: 15).
13.	Earring, Hollow Lunate Type VII.2, Decorated Hollow Lunate. Silver. Tel Ḥalif, from Tomb 20, 8th c. (after Borowski 1994: fig. 7: 17).
14.	Earring, Hollow Lunate Type VII.2, Decorated Hollow Lunate. Silver. From Jordanian Hoard, 5th (?) c. (after Kraay and Moorey 1968: pl. 22: 125).
15.	Earring, Hollow Lunate Type VII.2, Decorated Hollow Lunate. Silver. Jerusalem, Ketef Hinnom, from Cave 25 Burial repository, 7th-5th c. (after Barkay 1986: 27).
16.	Earring, Hollow Lunate Type VII.2, Decorated Hollow Lunate. Silver. Jerusalem, Ketef Hinnom, from Cave 25 Burial repository, 7th-5th c. (after Barkay 1986: 27).
17.	Earring, Hollow Lunate Type VII.2, Decorated Hollow Lunate. Silver. Kamid el-Loz, from Grave 9, 6th-4th c. (after Poppa 1978: pl. 9: 8).

Figure 14
(Scale – 1: 1)

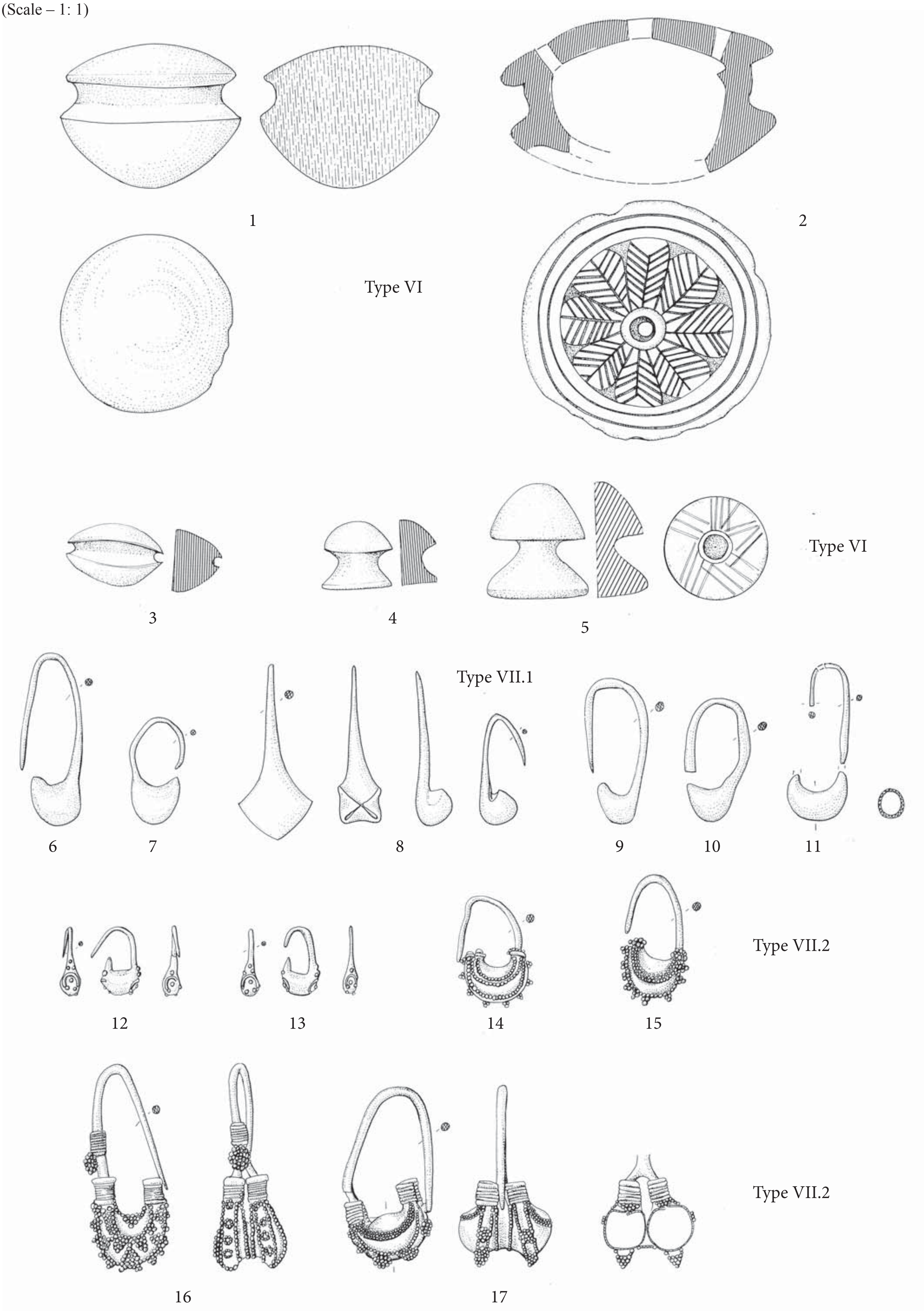


Figure 15 – Small Rings
Types I.1, I.2a-b, II.1, III.2a, III.4, III.5, III.6a-b

1.	Small Ring, Open-Ended Annular Type I.1, Plain. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 11: 1).
2.	Small Ring, Open-Ended Annular Type I.1, Plain. Silver. Tel Miqne-Ekron, from Stratum IA, 7th c. (after Golani forthcoming A).
3.	Small Ring, Open-Ended Annular Type I.1, Plain. Silver. Tel Miqne-Ekron, from Stratum VII, 12th c. (after Golani forthcoming A).
4.	Small Ring, Open-Ended Annular Type I.2a, Decorated (beaded or with bulbous end). Silver. Tel Miqne-Ekron, from Stratum IC-IV, 10th-7th c. (after Golani 1996a: fig. 9: 3).
5.	Small Ring, Open-Ended Annular Type I.2a, Decorated (beaded or with bulbous end). Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c.
6.	Small Ring, Open-Ended Annular Type I.2b, Decorated with Knotted or Wound Wire Terminals. Silver. Lachish, from Burial Cave 4004, 15th-13th c. (after Tufnell 1958: pl. 25: 10).
7.	Small Ring, Open-Ended Annular Type I.2b, Decorated with Knotted or Wound Wire Terminals. Gold. Tharros, from Tomb 7, 5th-3rd c. (after Pisano 1987: pl. 39:c).
8.	Small Ring, Open-Ended Annular Type I.2b, Decorated with Knotted or Wound Wire Terminals. Silver. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 37).
9.	Small Ring, Spiral Type II.1, Plain Spiral. Copper alloy. Golan, Dolmen no. 1, 22nd-20th c. (after Epstein 1985: fig. 2: 1).
10.	Small Ring, Spiral Type II.1, Plain Spiral. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 13: 3).
11.	Small Ring, Spiral Type II.1, Plain Spiral. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
12.	Small Ring, Finger-Ring Type III.2a, Flattened Open-Ended Annular. Copper alloy. Golan, from Dolmen N. 16, 7th-6th c. (after Epstein 1985: fig. 5: 14).
13.	Small Ring, Finger-Ring Type III.2a, Flattened Open-Ended Annular. Copper alloy. Golan, from Dolmen N. 16, 7th-6th c. (after Epstein 1985: fig. 5: 15).
14.	Small Ring, Finger-Ring Type III.2a, Flattened Open-Ended Annular. Copper alloy. Ḥazor, from Stratum IV, 8th c. (after Yadin et al. 1959: pl. 106: 9).
15.	Small Ring, Finger-Ring Type III.2a, Flattened Open-Ended Annular. Gold. Megiddo, from Tomb 39, 12th c. (after Guy 1938: pl. 166: 3).
16.	Small Ring, Finger-Ring Type III.2a, Flattened Open-Ended Annular. Silver foil over copper alloy. Tel Miqne-Ekron, from Stratum VIB, 12th c. (after Golani 1996a: fig. 10: 2).
17.	Small Ring, Finger-Ring Type III.4, with Attached Cartouche-Shaped Bezel. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 13: 4).
18.	Small Ring, Finger-Ring Type III.4, with Attached Cartouche-Shaped Bezel. Silver. Tharros, from Tomb 19, 7th-5th c. (after Pisano 1987: pl. 39: k).
19.	Small Ring, Finger-Ring Type III.5, with Widened, Flattened Ends Holding a Mount (mount missing). Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 13: 5).
20.	Small Ring, Finger-Ring Type III.5, with Widened, Flattened Ends Holding a Mount. Silver and faience. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 11: 2).
21.	Small Ring, Finger-Ring Type III.5, with Widened, Flattened Ends Holding a Mount. Silver. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
22.	Small Ring, Finger-Ring Type III.5, with Widened, Flattened Ends Holding a Mount. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
23.	Small Ring, Finger-Ring Type III.6a, with Swivel Bezel Mount and Scarab. Gold and carnelian. Akhziv, from Tomb T.A. 73, 9th c. (after Mazar 2001: fig. 43: 10).
24.	Small Ring, Finger-Ring Type III.6a, with Swivel Bezel Mount and Scarab. Silver and carnelian. Akhziv, from Tomb T.A. 72, 9th-4th c. (after Mazar 2001: fig. 65: 24).
25.	Small Ring, Finger-Ring Type III.6a, with Swivel Bezel Mount and Scarab. Silver and carnelian. Akhziv, from Tomb T.A. 72, 9th-4th c. (after Mazar 2001: fig. 65: 23).
26.	Small Ring, Finger-Ring Type III.6a, with Swivel Bezel Mount and Scarab. Copper alloy and feldspar. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 54: 15).
27.	Small Ring, Finger-Ring Type III.6a, with Swivel Bezel Mount and Scarab. Silver and green jasper. Akhziv, from Tomb ZX, 10th-8th c. (after Dayagi-Mendels 2002: fig. 3.9: 31).
28.	Small Ring, Finger-Ring Type III.6a, with Swivel Bezel Mount and Scarab. Copper alloy and faience(?). Tel Malḥata, from unclear context, 7th-6th c. (after Beit-Arieh 1994: fig. 127).
29.	Ribbed shank of Small Ring, Finger-Ring, possibly Type III.6. Silver. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
30.	Small Ring, Finger-Ring Type III.6b, with Swivel Bezel of Solid Metal Scaraboid. Copper alloy. Tel Miqne-Ekron, from Stratum IC, 7th c. (after Golani 1996a: fig. 11: 4).
31.	Small Ring, Finger-Ring Type III.6b, with Swivel Bezel of Solid Metal Scaraboid. Copper alloy. Tel Beth-Shemesh, Level 2, 8th c. (after Golani forthcoming C).

Figure 15
(Scale – 1: 1)

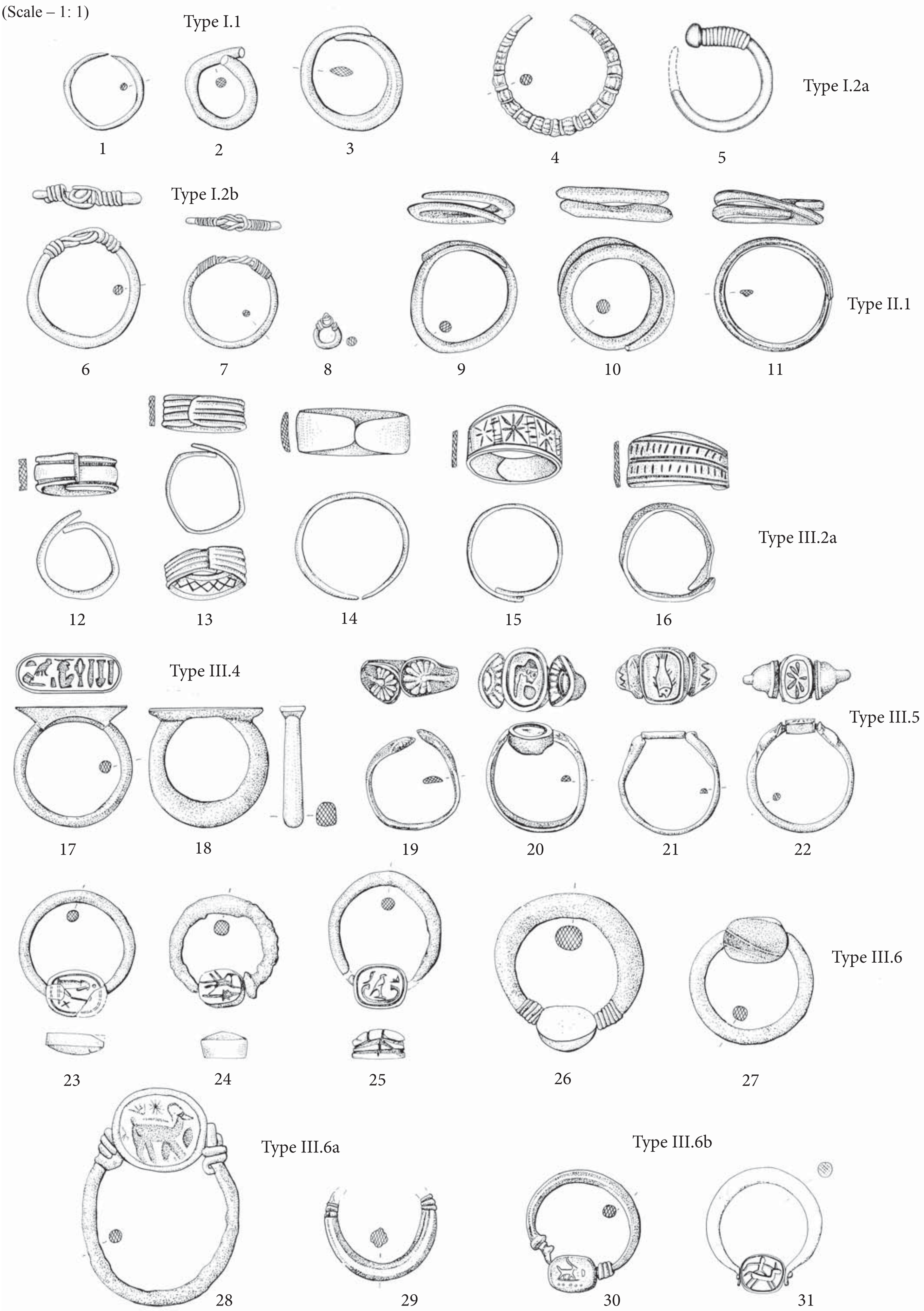


Figure 16 – Small Rings
Types III.7, III.7a-b, III.8a, III.9a-b

1.	Small Ring, Finger-Ring Type III.7, Multi-Stranded. Gold. Akhziv, from Tomb T.C. 4, 11th-10th c. (after Mazar 2001: fig. 18: 3).
2.	Small Ring, Finger-Ring Type III.7, Multi-Stranded. Gold. Lachish, Pit 556, 13th c. (after Tufnell 1958: pl. 25: 38).
3.	Small Ring, Finger-Ring Type III.7, Multi-Stranded. Copper alloy and iron. Tell es-Saʿidiyeh, from Tomb 123, 13th c. (after Pritchard 1980: fig. 27: 16).
4.	Small Ring, Finger-Ring Type III.7a, Multi-Stranded with Knot. Silver. Akhziv, from Tomb 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 25: 12).
5.	Small Ring, Finger-Ring Type III.7a, Multi-Stranded with Knot. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 13: 6).
6.	Small Ring, Finger-Ring Type III.7a, multi-stranded ring from ʻAtlit and knot manufacturing technique (after Johns 1933: fig. 12).
7.	Small Ring, Finger-Ring Type III.7b, Multi-Stranded with Cloisonée Bezel. Silver. Meqabelein, from Tomb, 7th-6th c. (after Harding 1950: pl. 15: 6).
8.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Silver. Kamid el-Loz, Grave 128, 6th-4th c. (after Hachmann and Penner 1999: pl. 26: 12, 24: 7).
9.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Copper alloy. Palmaḥim, from Tomb 28, 7th-5th c. (after Singer-Avitz and Levy 1994: fig. 4: 15).
10.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Silver. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 54: 13).
11.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Iron. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 54: 14).
12.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Silver. Akhziv, from Tomb 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 25: 17).
13.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Silver. Lachish, Pit 538, 13th c. (after Tufnell 1958: pl. 25: 50).
14.	Small Ring, Finger-Ring Type III.8a, with Flattened Oval-Shaped Bezel. Metal. Gold. Tell el-Farʿah (S), from Tomb 934, 13th-11th c. (after Starkey and Harding 1932: pl. 51: upper right; 53: 190).
15.	Small Ring, Finger-Ring Type III.9a, with Rectangular-Shaped Bezel. Silver. Tel Michal, from Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 7: 7).
16.	Small Ring, Finger-Ring Type III.9a, with Rectangular-Shaped Bezel. Silver. ʿAtlit, from Tomb L24B, 5th-4th c. (after Johns 1933: pl. 25: 651, fig. 11).
17.	Small Ring, Finger-Ring Type III.9a, with Rectangular-Shaped Bezel. Copper alloy. Kamid el-Loz, Grave 7, 6th-4th c. (after Hachmann and Penner 1999: pl. 24: 4, 26: 7).
18.	Small Ring, Finger-Ring Type III.9b, with Round Bezel. Silver. Tel Michal, from Strata XI-VI, 6th-4th c. (after Muhly and Muhly 1989: fig. 25.10: 176).
19.	Small Ring, Finger-Ring Type III.9b, with Round Bezel. Silver. Tell el-Farʿah (S), from Tomb 238, 10th-8th c. (after Petrie 1930: pl. 42: 308).
20.	Small Ring, Finger-Ring Type III.9b, with Round Bezel. Iron. Lachish, from Tomb 107, 10th-9th c. (after Tufnell 1953: pl. 54: 60).

Figure 16
(Scale – 1: 1)

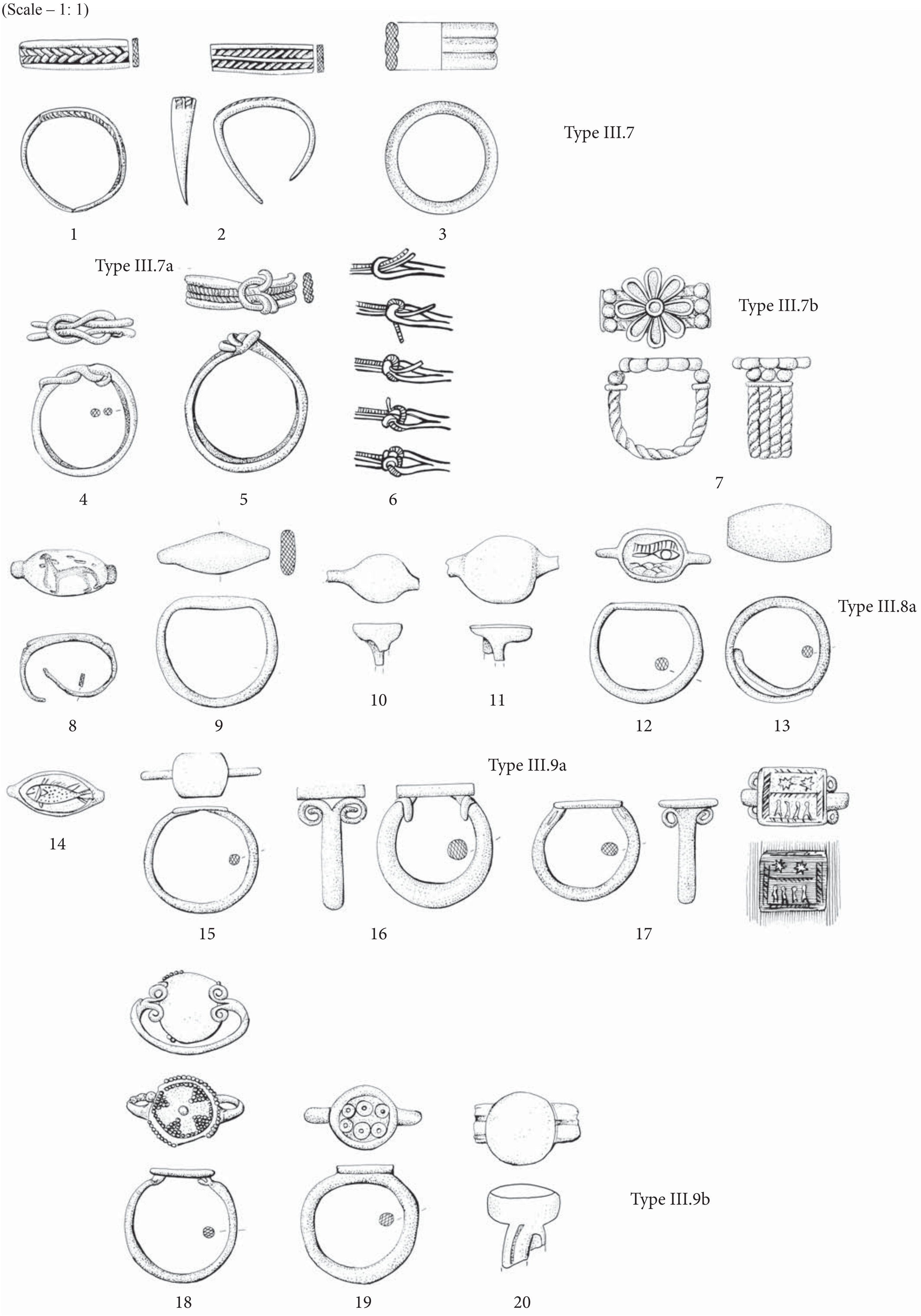


Figure 17 – Small Rings
Types III.10, III.11, III.11a, Type IV

1.	Small Ring, Finger-Ring Type III.10, Closed Shell Ring. Shell. Lachish, from Burial Cave 4005, 10^{th}-6^{th} c. (after Tufnell 1953: pl. 57: 43).
2.	Small Ring, Finger-Ring Type III.11, Plain Closed Annular. Metal. Copper alloy. Lachish, Quarry 4035, of unclear date (after Tufnell 1953: pl. 57: 52).
3.	Small Ring, Finger-Ring Type III.11, Plain Closed Annular. Metal. Silver. Tel Ḥalif, from Tomb 20, 8^{th} c. (after Borowski 1994: fig. 7: 22).
4.	Small Ring, Finger-Ring Type III.11a, Flattened Plain Closed Annular. Metal. Copper alloy. Tell el-Far'ah(N), from Stratum VIIB, 11^{th}-10^{th} c. (after Chambon 1984: pl. 72: 24).
5.	Small Ring, Type IV, Hoop. Silver. Tel 'Ira, from Tomb 23, 6^{th} c. (after Freud 1999: fig. 8: 4).

Figure 18 – Large Rings
Types I.1, I.2

1.	Large Ring, Open Type I.1, with Tapered Terminals and Semicircular or Square Section. Copper alloy. Lachish, from Burial (?) Locus 4026, 9^{th}-8^{th} c. (after Tufnell 1953: pl. 57: 50).
2.	Large Ring, Open Type I.1, with Tapered Terminals and Semicircular or Square Section. Copper alloy. Kh. Abu-Musarraḥ, from Dwelling and Burial cave, 12^{th}-6^{th} c. (after Golani 2004b: pl. 13: 4).
3.	Large Ring, Open Type I.2, with Tapered Terminals and Round Section. Copper alloy. Kh. Abu-Musarraḥ, from Dwelling and Burial cave, 12^{th}-6^{th} c. (after Golani 2004b: pl. 13: 3).
4.	Large Ring, Open Type I.2, with Tapered Terminals and Round Section. Copper alloy. Lachish, from Burial Cave 4005, 10^{th}-6^{th} c. (after Tufnell 1953: pl. 57: 46).
5.	Large Ring, Open Type I.2, with Tapered Terminals and Round Section. Iron. Tel Miqne-Ekron, from Stratum IV, 11^{th}-10^{th} c. (after Golani forthcoming A).

Figure 17
(Scale – 1: 1)

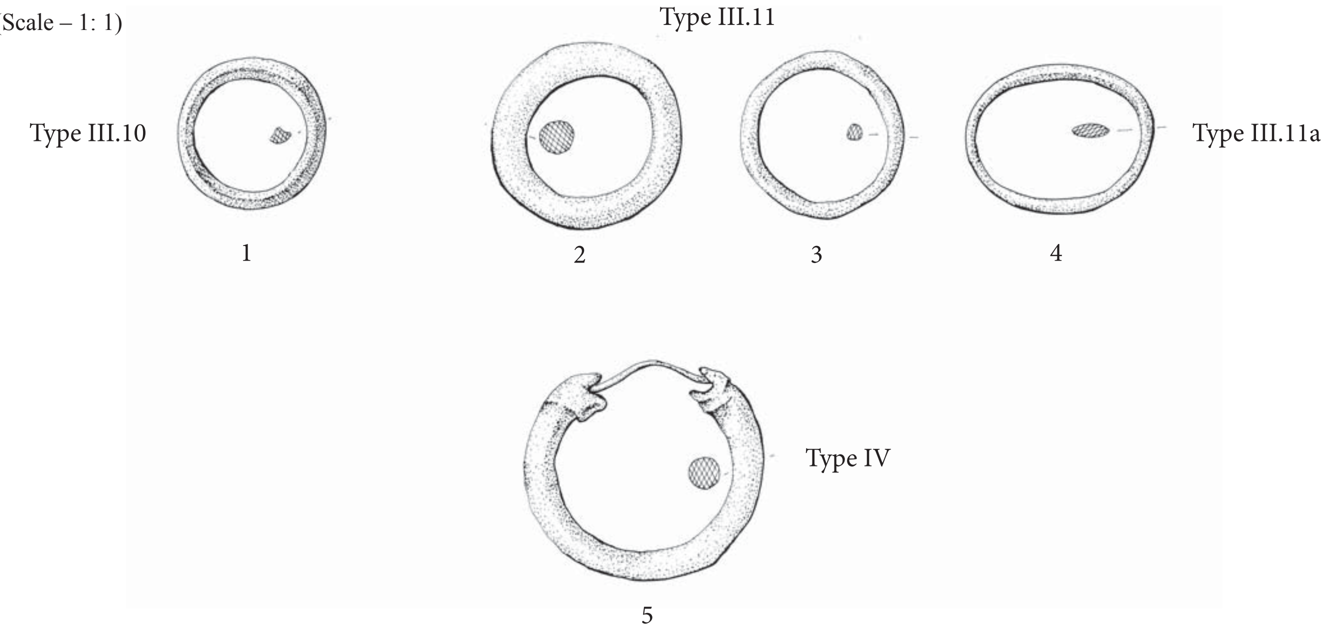


Figure 18
(Scale – 1: 1)

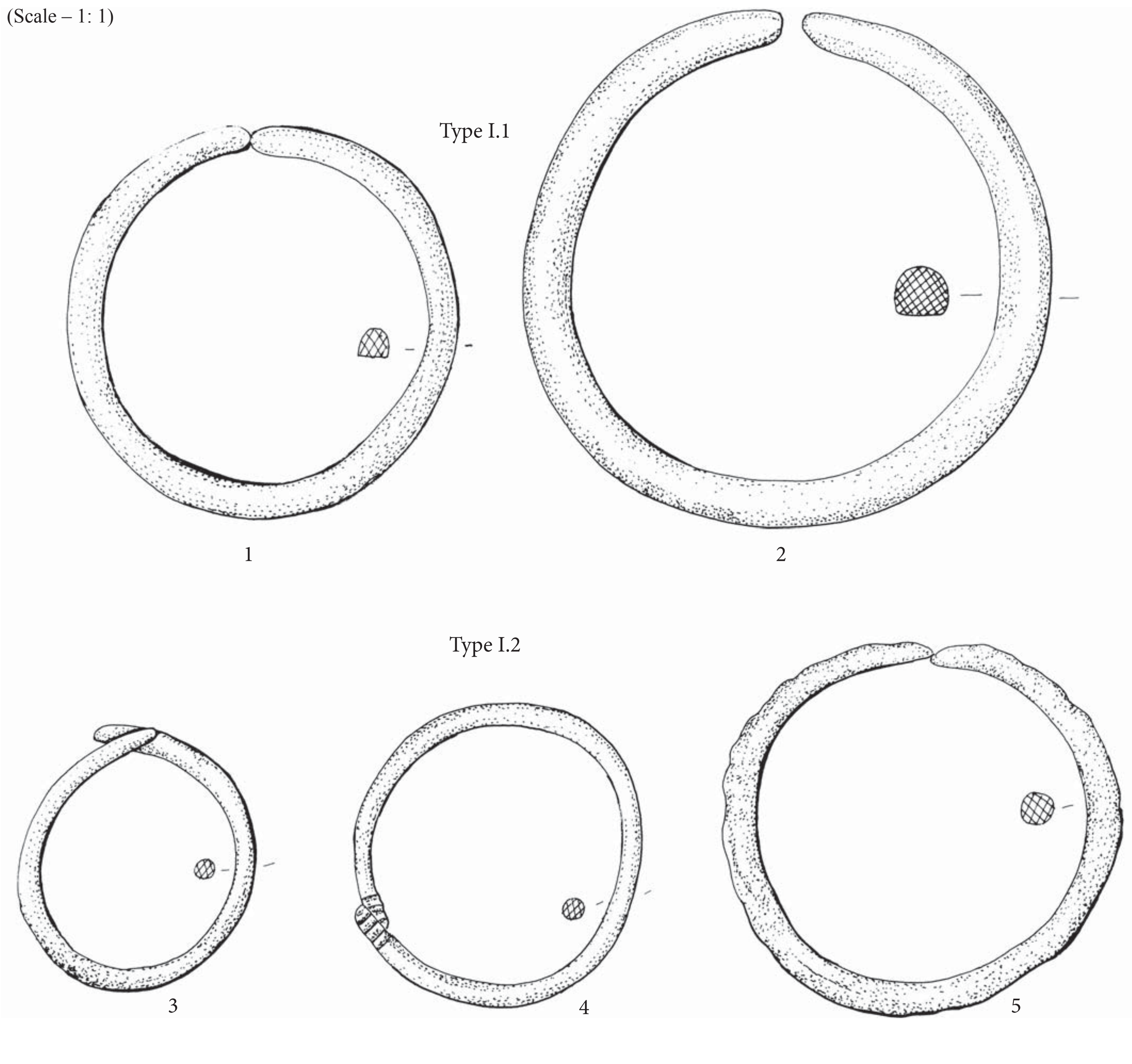
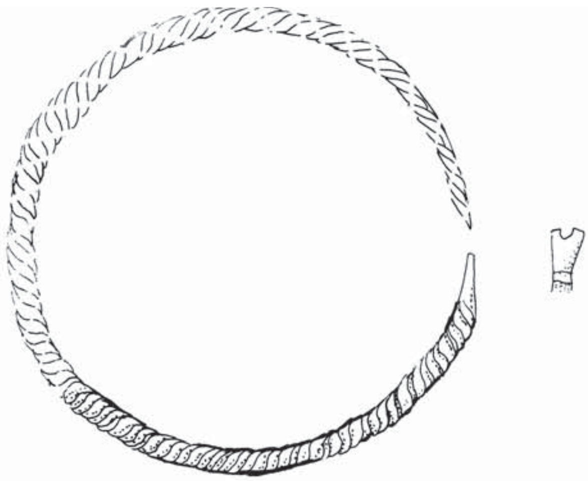


Figure 19 – Large Rings
Type I.3

1.	Large Ring, Open Type I.3, with Twisted Wire. Copper alloy. Et-Taiyiba, from Cave Tomb N. 6, 11th-10th c. (after Yannai 2002: fig. 10: 4).
2.	Large Ring, Open Type I.3, with Twisted Wire. Copper alloy. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 12: 3).
3.	Large Ring, Open Type I.3, with Twisted Wire. Copper alloy. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 54: 23).
4.	Large Ring, Open Type I.3, with Twisted Wire. Copper alloy. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 54: 16).
5.	Large Ring, Open Type I.3, with Twisted Wire. Copper alloy. Tel Michal, from Cist Tomb 2001, 6th-4th c. (after Herzog and Levy 1999: fig. 2: 4).

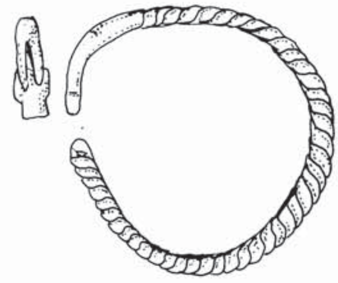
Figure 19
(Scale – 1: 1)



1

2

Type I.3



3

4

5

Figure 20 – Large Rings
Types I.4, I.5, I.6

1.	Large Ring, Open Type I.4, with Catch. Copper alloy. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 12: 4).
2.	Large Ring, Open Type I.5, with Squared Terminals and Semicircular or Square Section. Copper alloy. Tell Beit Mirsim, from Tomb 500, 9th-8th c. (after Golani 2004a: fig. 4.1: 4).
3.	Large Ring, Open Type I.5, with Squared Terminals and Semicircular or Square Section. Copper alloy. Tell Beit Mirsim, from Tomb 500, 9th-8th c. (after Golani 2004a: fig. 4.1: 5).
4.	Large Ring, Open Type I.6, with Squared Terminals and Round Section. Copper alloy. Lachish, Grave 110, 10th c. (after Tufnell 1953: pl. 54: 68).
5.	Large Ring, Open Type I.6, with Squared Terminals and Round Section. Silver. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).

Figure 20
(Scale – 1: 1)

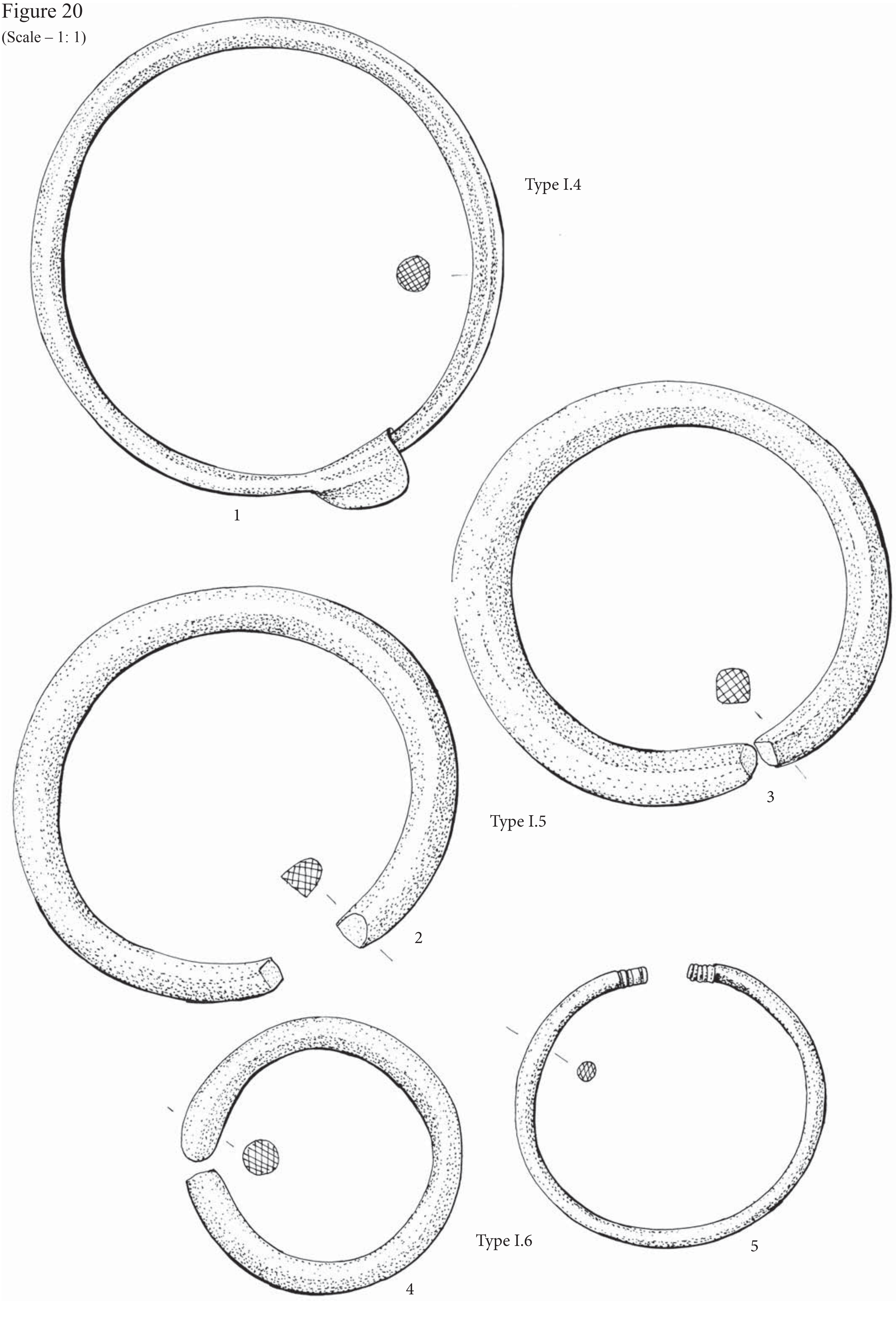
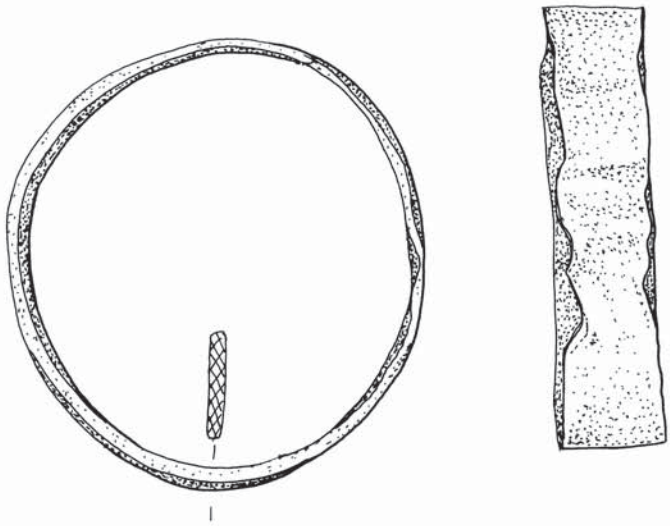


Figure 21 – Large Rings
Types II.1, II.2

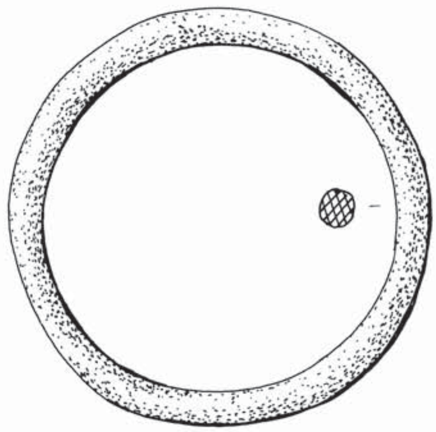
1.	Large Ring, Closed Type II.1, with Flat Section. Copper alloy. Et-Taiyiba, from Cave Tomb N. 6, 11th-10th c. (after Yannai 2002: fig. 10: 8).
2.	Large Ring, Closed Type II.2, with Rounded Section. Iron. Tell el-Farʻah (S), from Tomb 201, 10th-8th c. (after Petrie 1930: pl. 41: 281).

Figure 21
(Scale – 1: 1)



Type II.1

1



Type II.2

2

Figure 22 – Metal Pendants
Types I.1a-b, I.2a, I.3, I.4a-b, I.6, I.7, I.10, I.12, I.13, I.14

1.	Pendant, Metal Type I.1a, Solid Spherical Pendant. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 70, fig. 14: 1).
2.	Pendant, Metal Type I.1a, Solid Spherical Pendant. Silver. Akhziv cemetery, from Tomb N. 1 Phases 1-4, 10th-6th c. (after Mazar 2004: fig. 23: 1).
3.	Pendant, Metal Type I.1a, Solid Spherical Pendant. Silver. Akhziv cemetery, from Tomb N. 1 Phases 1-4, 10th-6th c. (after Mazar 2004: fig. 23: 2).
4.	Pendant, Metal Type I.1a, Solid Spherical Pendant. Silver. Akhziv cemetery, from Tomb N. 1 Phase 1-4, 10th-6th c. (after Mazar 2004: fig. 23: 4).
5.	Pendant, Metal Type I.1b, Hollow Spherical Pendant. Silver. Akhziv cemetery, from Tomb N. 1 Phases 1-4, 10th-6th c. (after Mazar 2004: fig. 23: 3).
6.	Pendant, Metal Type I.1b, Hollow Spherical Pendant. Silver. Tel Michal, from Cist Tomb 2001, 6th-4th c. (after Herzog and Levy 1999: fig. 2: 11).
7.	Pendant, Metal Type I.2a, Flat Ovoid or Rounded. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 70-72, fig. 14: 2).
8.	Pendant, Metal Type I.3, Pomegranate. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 17: 11).
9.	Pendant, Metal Type I.3, Pomegranate. Gold. Tel Miqne-Ekron, from Stratum VII, 12th c. (after Golani forthcoming A).
10.	Pendant, Metal Type I.3, Pomegranate. Gold. Tel Ashdod, from Stratum XIII, 12th c. (after Golani and Ben-Shlomo 2005: 249-250, fig. 4.1: 4).
11.	Pendant, Metal Type I.4a, Crescent with Stringing Holes. Silver. Gezer, from unclear context, probably Middle Bronze II (after Macalister 1912b: fig. 288: 12).
12.	Pendant, Metal Type I.4a, Crescent with Stringing Holes. Copper alloy. Ḥazor, from Period 1b, 14th c. (after Yadin et al. 1961: pl. 278: 11).
13.	Pendant, Metal Type I.4a, Crescent with Stringing Holes. Copper alloy. Ḥazor, from Period 1b, 14th c. (after Yadin et al. 1961: pl. 278: 12).
14.	Pendant, Metal Type I.4a, Crescent with Stringing Holes. Blue composition. Megiddo, from Stratum III, 8th-7th c. (after Lamon and Shipton 1939: pl. 77: 8).
15.	Pendant, Metal Type I.4a, Crescent with Stringing Holes. Bone. Ḥazor, from Stratum VI, 8th c. (after Yadin et al. 1961: pl. 188: 22).
16.-23.	Selection of Pendant Type I.4b, Crescent with Tubular Stringing Attachment. Gold and silver. From various local sites of the LB-Iron I periods (after McGovern 1985: fig. 66).
24.	Pendant, Metal Type I.4b, Crescent with Tubular Stringing Attachment. Silver. Akhziv, from Tomb T.A. 72, 9th-4th c. (after Mazar 2001: fig. 66: 20).
25.	Pendant, Metal Type I.4b, Crescent with Tubular Stringing Attachment. Gold. Tell el-Farʿah (S), from Tomb 229, 10th-8th c. (after Petrie 1930: pl. 39: 456).
26.	Pendant, Metal Type I.6, Bell. Copper alloy. Tel Batash, from Stratum II, 7th c. (after Mazar and Panitz-Cohen 2002: pl. 39: 10).
27.	Pendant, Metal Type I.7, Composite–Metal Hoop and Bead. Silver and faience. Tel Michal, from Cist Tomb 2001, 6th-4th c. (after Herzog and Levy 1999: fig. 2: 10).
28.	Pendant, Metal Type I.7 Composite–Metal Hoop and Bead on an Earring. Gold and carnelian. Tharros, from Tomb 29, 7th-3rd c. (after Pisano 1987: pl. 39:e).
29.	Pendant, Metal Type I.10, Double Concentric Spiral Wire. Gold. Tawilan, from hoard, 10th-9th c. (after Ogden 1995: fig. 8.27).
30.	Pendant, Metal Type I.12, Amphora-Shaped. Silver. Akhziv, from Tomb N. 1 Phase 1, 10th-9th c. (after Mazar 2004: fig. 23: 6).
31.	Pendant, Metal Type I.12, Amphora-Shaped. Copper alloy. Kamid el-Loz, from Grave 10, 6th-4th c. (after Hachmann and Penner 1999: pl. 36: 4).
32.	Pendant, Metal Type I.12, Amphora-Shaped. Silver. Tel Michal, from Strata XI-VI, 6th-4th c. (after Muhly and Muhly 1989: fig. 25: 10: 206).
33.	Pendant, Metal Type I.13, *Pazazu*. Copper alloy. Tel Beth-Shean, from Stratum P-5a, 8th c. (after Ornan 2006a: fig. 1).
34.	Pendant, Metal Type I.14, Round Medallion, Composite. Silver. Akhziv, from Tomb N. 1 Phases 1-2, 9th-7th c. (after Mazar 2004: fig. 23: 10).
35.	Pendant, Metal Type I.14, Round Medallion, Composite. Gold, silver and glass. Akhziv, from Tomb N. 1 Phases 1-2, 9th-7th c. (after Mazar 2004: fig. 23: 10).
36.	Pendant, Metal Type I.14 Round Medallion, Composite. Silver and rock crystal. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: fig. 14: 7).

Figure 22

(Scale – 1: 1)

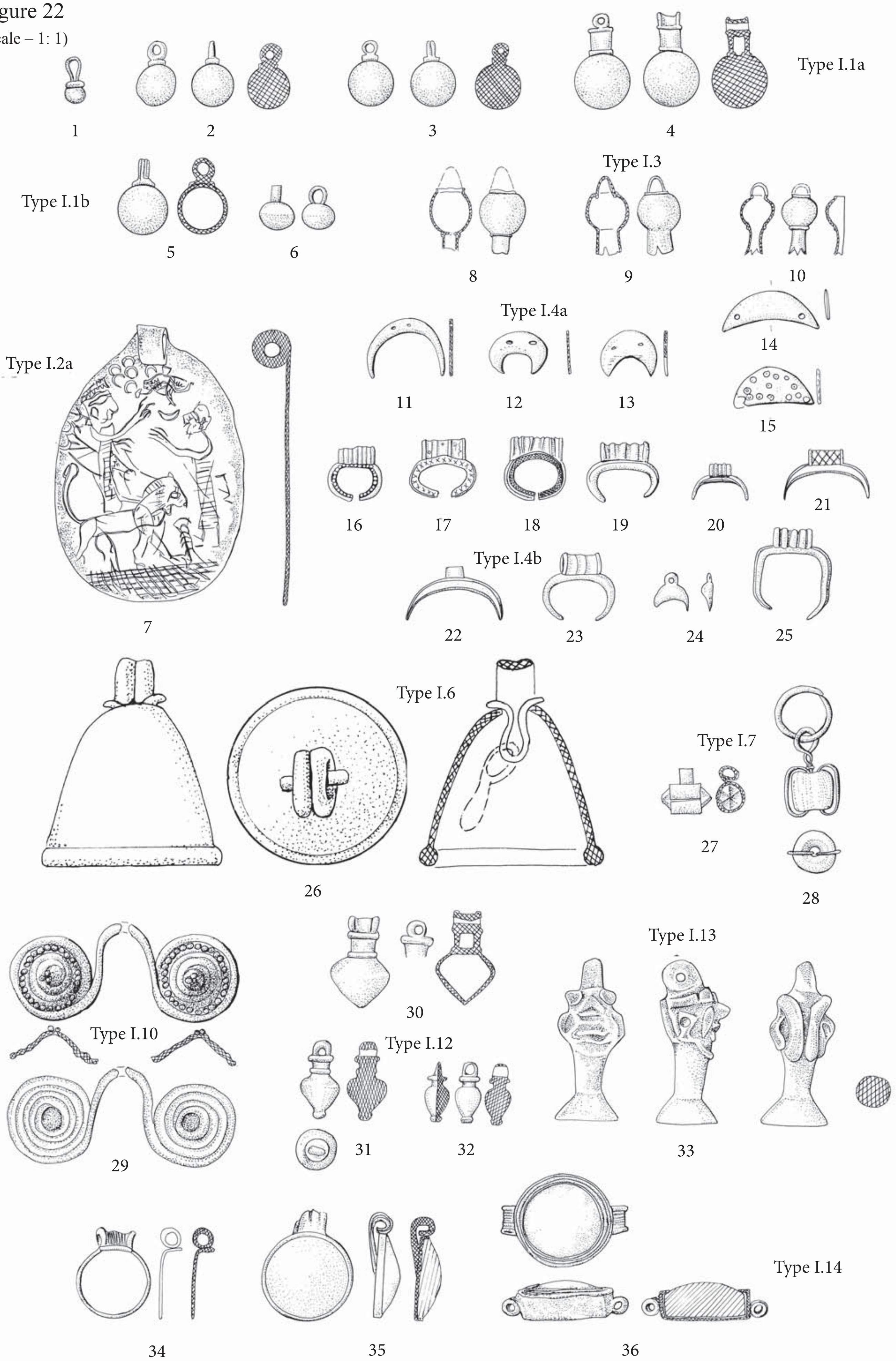


Figure 23 – Stone Pendants
Types II.1, II.1a, II.2a-c, II.3, II.4, II.5, II.6, II.8, II.9

1.	Pendant, Stone Type II.1, Elongated Drop. Hematite. Tell el-Farʿah (S), from Tomb 127, 12th-11th c. (after Starkey 1930: Type U: 38).
2.	Pendant, Stone Type II.1, Elongated Drop. Dark gray stone. Tel Ashdod, from Strata VII-VI, 7th c. (after Golani and Ben-Shlomo 2005: fig. 4.1: 5).
3.	Pendant, Stone Type II.1, Elongated Drop. Serpentine? Azor, from Burial D 78, 11th c. (after Golani 2012: fig. 6.2: 4).
4.	Pendant, Stone Type II.1, Elongated Drop. Rock crystal. Tell Beit Mirsim, from Tomb 24, 18th-16th c. (after Golani 2004: fig. 4.1: 6).
5.	Pendant, Stone Type II.1a, Elongated Drop with Bulbous Bottom. Hematite. Tel Ashdod, from Stratum XI, 11th c. (after Golani and Ben-Shlomo 2005: fig. 4.1: 6).
6.	Pendant, Stone Type II.2a, Pyramidal-Triangular. Unidentified stone. Tel Ashdod, from Stratum 3b, 4th-2nd c. (after Dothan 1971: fig. 49: 5).
7.	Pendant, Stone Type II.2a, Pyramidal-Triangular. Gabbro. Tel Miqne-Ekron, from Stratum I, 7th c. (after Golani 1996a: fig. 13: 4).
8.	Pendant, Stone Type II.2b, Inverted Triangular. Onyx. Lachish, from Burial Cave 4005, 10th-6th c. (after Tufnell 1953: pl. 67: 115).
9.	Pendant, Stone Type II.2b, Inverted Triangular. Agate? Tel Michal, from Cist Tomb 2007, 6th-4th c. (after Herzog and Levy 1999: fig. 4: 10).
10.	Pendant, Stone Type II.2c, Inverted Triangular with Ribbed Decoration. Limestone. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
11.	Pendant, Stone Type II.3, Truncated Conical. Black stone. Tel Miqne-Ekron, from Stratum IVA, 11th-10th c. (after Golani 1996a: fig. 13: 5).
12.	Pendant, Stone Type II.3, Truncated Conical. Rock crystal. Tell el-Farʿah (S), from Tomb 126, 12th-11th c. (after Starkey 1930:Type U: 66).
13.	Pendant, Stone Type II.4, Lotus Seed Vessel. Carnelian. Deir el-Balaḥ, from Tomb 116, 13th c. (Dothan 1979:ill. 99).
14.	Pendant, Stone Type II.4, Lotus Seed Vessel. Carnelian. Tel Miqne-Ekron, from Stratum VI, 12th c. (after Golani 1996a: fig. 13: 7).
15.	Pendant, Stone Type II.4, Lotus Seed Vessel. Carnelian. Tel Ashdod, from Stratum XIb, 11th c. (after Golani and Ben Shlomo 2005: fig. 4.1: 7).
16.	Pendant, Stone Type II.4, Lotus Seed Vessel. Carnelian. Tell Beit Mirsim, from Tomb 100, 14th c. (after Golani 2004: fig. 4.1: 7).
17.	Pendant, Stone Type II.4, Lotus Seed Vessel. Carnelian. Tel Miqne-Ekron, from Stratum VII (12th c., though possibly earlier; after Golani forthcoming A).
18.	Pendant, Stone Type II.5, Axe or Celt-Shaped. Carnelian. Kh. Abu Musarraḥ, from Dwelling and Burial cave, 12th-6th c. (after Golani 2004b: pl. 14: 1).
19.	Pendant, Stone Type II.5, Axe or Celt-Shaped. Carnelian. Azor, from Burial D 28, 10th-9th c. (after Golani 2012: fig. 6.2: 5).
20	Pendant, Stone Type II.5, Axe or Celt-Shaped. Serpentine. Tell el-Farʿah (S), from Tomb 201, 10th-8th c. (after Starkey 1930:Type U: 62).
21.	Pendant, Stone Type II.6, Rectangular. Hematite. Tel Ashdod, from Strata IX-VIII, 9th-8th c. (after Golani and Ben Shlomo 2005: fig. 4.1: 8).
22.	Pendant, Stone Type II.8, Lozenge-Shaped. Green jasper? Akhziv, from Tomb ZR IX, 10th-6th c. (after Dayagi-Mendels 2002: fig. 4.7: 104).
23.	Pendant, Stone Type II.9, Weight. Copper alloy. Tel Ashdod, from Stratum IX, 10th-8th c. (after Dothan and Porath 1982: fig. 12: 2; pl. 15: 16).
24.	Pendant Type II.9, Weight. Serpentine and copper alloy. Kamid el-Loz, from Grave 76, 6th-4th c. (after Hachmann and Penner 1999: pl. 36: 24).

Figure 23 (Scale – 1: 1)

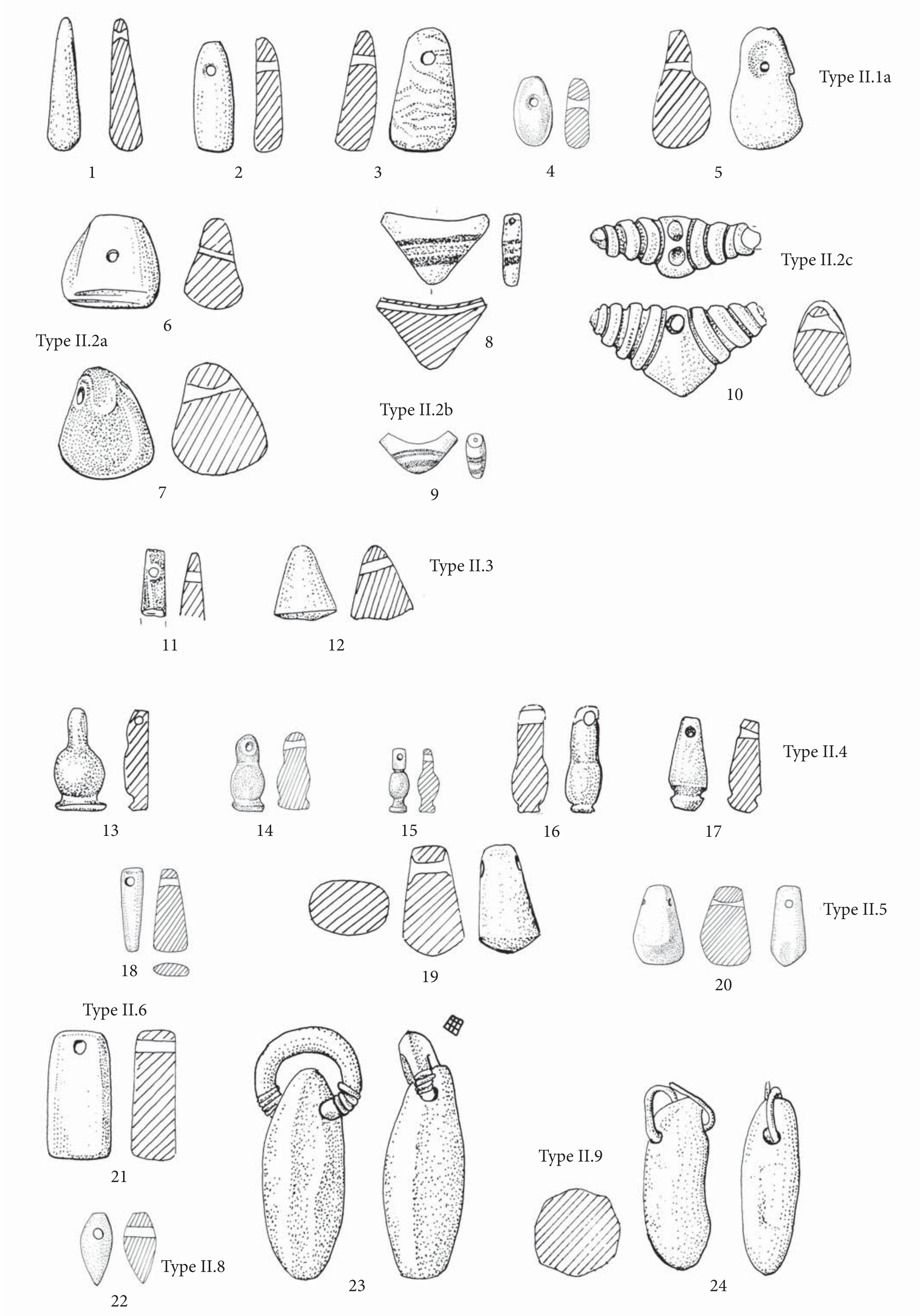


Figure 24 – Bone/Ivory/Shell Pendants
Types III.1, III.1a-b

1.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Lachish, from Burial Cave 1002, 8th c. (after Tufnell 1953: pl. 57: 30).
2.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912c: pl. 226: 45).
3.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone/Ivory. Tel Batash, from Strata III-II, 8th-7th c. (after Yahalom-Mack 2006: pl. 57: 14).
4.	Pendant, Bone/Ivory/Shell Type III.1, Club. Ivory. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 14: 2).
5.	Pendant, Bone/Ivory/Shell Type III.1, Club. Ivory. Tel Miqne-Ekron, from Stratum IVA-B, 11th-10th c. (after Golani 1996a: fig. 14: 1).
6.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Lachish, from Burial Cave 1002, 8th c. (after Tufnell 1953: pl. 57: 31).
7.	Pendant, Bone/Ivory/Shell Type III.1, Club. Ivory. Tel Miqne-Ekron, from Stratum IVA-B, 11th-10th c. (after Golani 1996a: fig. 14: 3).
8.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912c: pl. 226: 61).
9.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912c: pl. 226: 47).
10.	Pendant, Bone/Ivory/Shell Type III.1, Club. Ivory. Tell el-Far'ah(N), from Stratum VIIB, 11th-10th c. (after Chambon 1984: pl. 73: 1).
11.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Tell el-Farʻah (S), from Tomb 221, 9th c. (after Petrie 1930: pl. 41: 292).
12.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Tell Jemmeh, from unclear context (after Petrie 1928: pl. 33: 22).
13.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912c: pl. 226: 46).
14.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912c: pl. 226: 48).
15.	Pendant, Bone/Ivory/Shell Type III.1, Club. Bone. Tell Beit Mirsim, from Stratum A, 9th-7th c. (after Albright 1943: pl. 32: 15).
16.	Pendant, Bone/Ivory/Shell Type III.1a, Club. Short with Square Section. Bone. Lachish, from Tomb, 10th-9th c. (after Tufnell 1953: pl. 67: 128).
17.	Pendant, Bone/Ivory/Shell Type III.1b, Hourglass-Shaped. Ivory. Tel Ashdod, from Stratum XII, 12th c. (Golani and Ben-Shlomo 2005: fig. 4.1: 9).
18.	Pendant, Bone/Ivory/Shell Type III.1b, Hourglass-Shaped. Bone or ivory. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912b: pl. 226: 57).

Figure 24
(Scale – 1: 1)

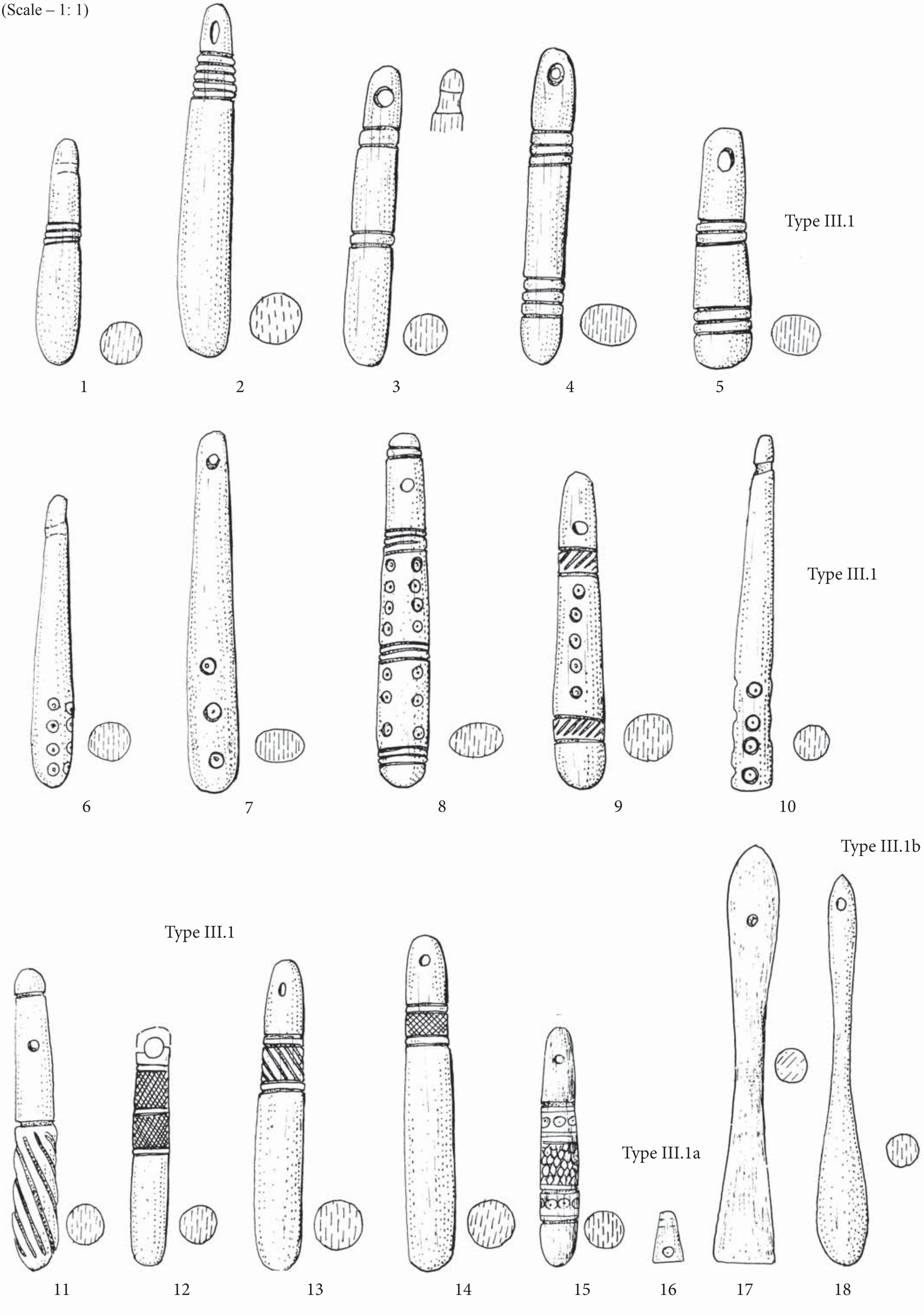


Figure 25 – Bone/Ivory/Shell Pendants
Type III.2

1.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Jerusalem, City of David, from ground surface (after Ariel 1990: 137, fig. 17: BI 153).
2.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Lachish, from Cave 1002, 8th c. (after Tufnell 1953: pl. 57: 28).
3.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912b: pl. 226: 58).
4.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912b: pl. 226: 59).
5.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Tell Jemmeh, from EC192, 10th-9th c. (after Petrie 1928: pl. 33: 42).
6.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Lachish, from Tomb 107, 10th-9th c. (after Tufnell 1953: pl. 54: 64).
7.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Lachish, from Cave 1002, 8th c. (after Tufnell 1953: pls. 37: 16; 57: 29).
8.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Lachish, from Tomb 218, 10th-9th c. (after Tufnell 1953: pls. 37: 18; 55: 51).
9.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Tell el-Farʿah (S), from Tomb 201, 10th-8th c. (after Petrie 1930: pls. 40: 481; 36).
10.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Lachish, Level III-II, 8th-7th c. (after Tufnell 1953: pls. 41: 10, 63: 15).
11.	Pendant, Bone/Ivory/Shell Type III.2, Plaque. Bone. Tell el-Farʿah (S), from unclear context (after Starkey and Harding 1932: pl. 74: 116).

Figure 25
(Scale – 1: 1)

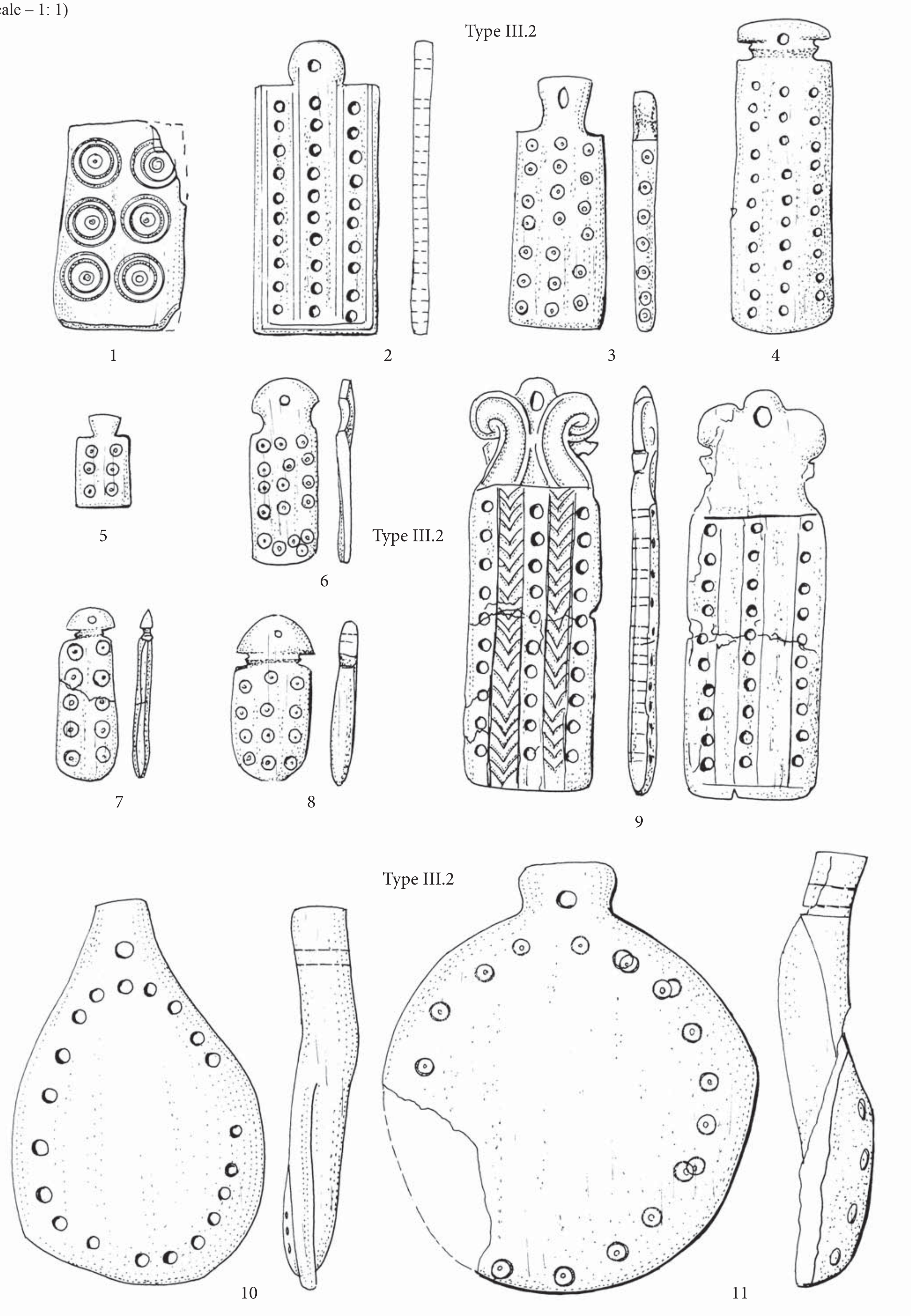


Figure 26 – Bone/Ivory/Shell Pendants
Types III.3, III.4, III.5, III.6, III.7, III.8, III.11

1.	Pendant, Bone/Ivory/Shell Type III.3, Tooth/Tusk. Bear canine. Tel Miqne-Ekron, from Stratum IB, 7^{th} c. (after Golani 1996a: fig. 14: 5).
2.	Pendant, Bone/Ivory/Shell Type III.4, Cowrie Shell with Dorsum Removed. *Cypraea* shell. Tel Miqne-Ekron, from Stratum IB, 7^{th} c. (after Golani 1996a: fig. 14: 6).
3.	Pendant, Bone/Ivory/Shell Type III.4, Cowrie Shell with Dorsum Removed. *Cypraea* shell. Tell Beit Mirsim, from Tomb 500, 14^{th}-8^{th} c. (after Golani 2004a: fig. 4.1: 10).
4.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Ivory. Tel Miqne-Ekron, from Stratum IVB-C, 11^{th}-10^{th} c. (after Golani forthcoming A).
5.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Ivory. Tel Ashdod, from Stratum X, 10^{th}-9^{th} c. (after Golani and Ben-Shlomo 2005: fig. 4.1: 11).
6.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Bone. Lachish, from Tomb 218, 10^{th}-9^{th} c. (after Tufnell 1953: pl. 55: 48).
7.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Bone. Lachish, from Tomb 218, 10^{th}-9^{th} c. (after Tufnell 1953: pl. 55: 49).
8.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Bone. Lachish, from Tomb 218, 10^{th}-9^{th} c. (after Tufnell 1953: pl. 55: 50).
9.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Bone. Lachish, from Tomb 120, 10^{th}-6^{th} c. (after Tufnell 1953: pl. 55: 25).
10.	Pendant, Bone/Ivory/Shell Type III.5, Mallet-Shaped. Bone. Lachish, from Tomb 120, 10^{th}-6^{th} c. (after Tufnell 1953: pl. 55: 26).
11.	Pendant, Bone/Ivory/Shell Type III.6, Modified Cassid Lip. *Cassid* shell. Tel Miqne-Ekron, from Stratum VII, 12^{th} c. (after Golani forthcoming A).
12.	Pendant, Bone/Ivory/Shell Type III.7, Bivalve Holed at Umbo. *Glycymeris* shell. Tell Beit Mirsim, from Tomb 24, 18^{th}-16^{th} c. (after Golani 2004a: fig. 4.1: 11).
13.	Pendant, Bone/Ivory/Shell Type III.8, Flat Drop. *Pinctada* shell. Tell Beit Mirsim, from Tomb 5, 9^{th}-8^{th} c. (after Golani 2004a: fig. 4.1: 12).
14.	Pendant, Bone/Ivory/Shell Type III.8, Flat Drop. Ivory. Tel Batash, from Stratum II, 7^{th} c. (after Mazar and Panitz-Cohen 2001: pl. 39: 8).
15.	Pendant, Bone/Ivory/Shell Type III.11, 'U'-Shaped. Bone. Tell el-Farʻah (S), from Tomb 201, 10^{th}-8^{th} c. (after Petrie 1930: pl. 40: 488).
16.	Pendant, Bone/Ivory/Shell Type III.11, 'U'-Shaped. Bone. Jerusalem, City of David, from Stratum 11, 7^{th} c. (after Ariel 1990: 137 fig. 17:BI 154).

Figure 26 (Scale – 1: 1)

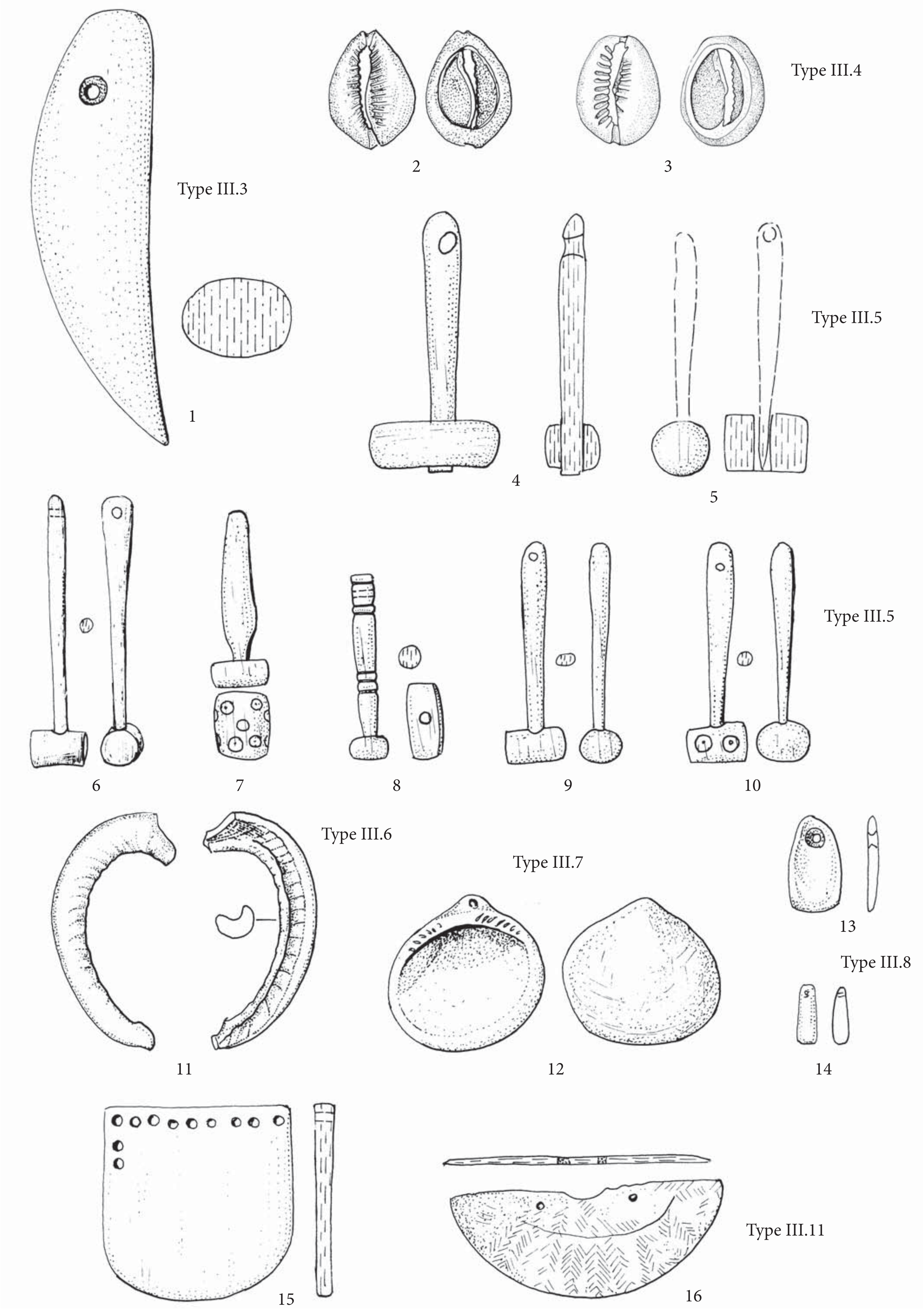
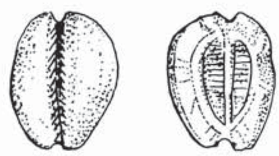


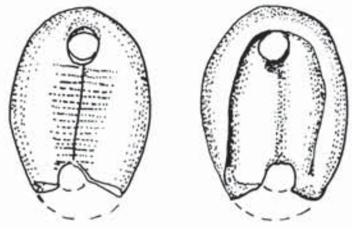
Figure 27 – Siliceous Pendants
Types IV.1, IV.2, IV.6

1.	Pendant, Siliceous Type IV.1, Imitation Cowrie. Egyptian Blue. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Cowie 2004: 247, N. 20).
2.	Pendant, Siliceous Type IV.1, Imitation Cowrie. Faience. Lachish, from unclear context on tell, 8th-7th c. (after Herrmann 1994: pl. 78: 1324, see Tufnell 1953: pl. 36: 53).
3.	Pendant, Siliceous Type IV.2, Grotesque Head. Glass. Tel Be'er Sheva, from Stratum II, 8th c. (after Herrmann 1994: pl. 79: 1345).
4.	Pendant, Siliceous Type IV.2, Grotesque Head. Faience. Akhziv, from Tomb ZR XXXVI, 10th-7th c. (after Dayagi-Mendels 2002: fig. 4.27: 115).
5.	Pendant, Siliceous Type IV.2, Grotesque Head. Bone. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Cowie 2004: 238, N. 11).
6.	Pendant, Siliceous Type IV.6, Elongated Oval or Conical. Faience. Akhziv, from Tomb ZR IX, 10th-6th c. (after Dayagi-Mendels 2002: fig. 4.7: 103).

Figure 27
(Scale – 1: 1)

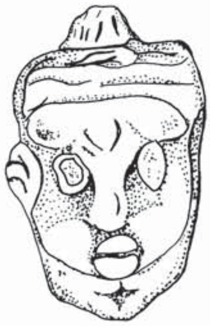


1



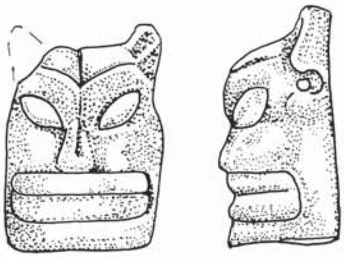
Type IV.1

2



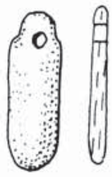
3

4



Type IV.2

5



Type IV.7

6

Figure 28 – Metal Beads
Types I.1, I.1a, I.2, I.3, I.4, I.5,I.5a, I.6, I.7, I.8, I.9, I.10, I.11, I.13, I.14, I.15

1.	Bead, Metal Type I.1, Granule. Silver. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 36).
2.	Bead, Metal Type I.1, Granule. Silver. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 41).
3.	Bead, Metal Type I.1, Granule. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 72, fig. 14: 3).
4.	Bead, Metal Type I.1a, Double Tubular (spacer) Granule. Gold. Tawilan, from hoard, 10th-9th c. (after Ogden 1995: fig. 8.4).
5.	Bead, Metal Type I.2, Wound Wire. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 72, fig. 14: 4).
6.	Bead, Metal Type I.2, Wound Wire. Gold. Lachish, Level III or earlier, 8th c. or earlier (after Tufnell 1958: pl. 42: 3).
7.	Bead, Metal Type I.3, 'Winged'. Silver. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 16: 3).
8.	Bead, Metal Type I.4, Hollow Spacer. Silver. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani and Sass 1998: 72, fig. 14: 5).
9.	Bead, Metal Type I.5, Plain spherical or squat globular hollow. Silver. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 22: 110).
10.	Bead, Metal Type I.5, Plain Spherical or Squat Globular Hollow. Gold. Tel Miqne-Ekron, from Stratum IVA, 11th-10th c. (after Golani 1996a: fig. 16: 5).
11.	Bead, Metal Type I.5a, Squat Globular, Barrel or Biconical Hollow – Fluted. Gold. Lachish, from Burial Cave 4005, 20th-9th c. (after Tufnell 1953: pl. 66: 64).
12.	Bead, Metal Type I.5a, Squat Globular, Barrel or Biconical Hollow – Fluted. Gold. Deir el-Balaḥ, from Tomb 118, 13th c. (after Dothan 1979:ill. 189).
13.	Bead, Metal Type I.5a, Squat Globular, Barrel or Biconical Hollow – Fluted. Gold. Akko, from Tomb B3, 14th c. (after Ben-Arieh and Edelstein 1977: fig. 14: 8).
14.	Bead, Metal Type I.5a, Squat Globular, Barrel or Biconical Hollow – Fluted. Silver. Tell el-Farʿah (S), from Tomb 119, from unclear date (after Starkey 1930: Type K: 14).
15.	Bead, Metal Type I.6, Decorated Spherical Hollow. Silver. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 16: 6).
16.	Bead, Metal Type I.7, Flat Disk. Silver. Tel Miqne-Ekron, from unclear context (after Golani forthcoming A).
17.	Bead, Metal Type I.7, Flat Disk. Unspecified metal. Akhziv, from Tomb N. 1, 10th-9th c. (after Mazar 2004: fig. 22: 28).
18.	Bead, Metal Type I.8, Barrel-Shaped or Convex Biconical. Silver. Akhziv, from Tomb T.A. 69, 9th-4th c. (after Mazar 2001: fig. 60: 16).
19.	Bead, Metal Type I.8, Barrel-Shaped or Convex Biconical. Silver. Tell el-Farʿah (S), from Tomb 552, 13th-12th c. (after Starkey 1930: Type D: 114).
20.	Bead, Metal Type I.8, Barrel-Shaped or Convex Biconical. Gold. Tell el-Farʿah (S), from Tomb 231, 10th-8th c. (after Starkey 1930: Type D: 139).
21.	Bead, Metal Type I.8, Barrel-Shaped or Convex Biconical. Silver with clay (?) filling. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
22.	Bead, Metal Type I.9, Wround Flat Strip. Gold. Tell el-Farʿah (S), from Tomb 211, 12th-11th c. (after Starkey 1930: Type N: 162).
23.	Bead, Metal Type I.9, Wround Flat Strip. Gold. Deir el-Balaḥ, from Tomb 118, 13th c. (after Dothan 1979:ill. 190).
24.	Bead, Metal Type I.10, Cylindrical. Copper alloy. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 44).
25.	Bead, Metal Type I.10, Cylindrical. Silver. Tel Michal, from Cist Tomb 2001, 6th-4th c. (after Herzog and Levy 1999: fig. 2: 8).
26.	Bead, Metal Type I.10, Cylindrical. Silver. Akhziv, from Tomb T.A. 72, 9th-4th c. (after Mazar 2001: fig. 66: 61).
27.	Bead, Metal Type I.11, Spacer. Silver. Eshtemoʿa, from hoard, 10th c. (after Yeivin 1990: fig. 17: 7).
28.	Bead, Metal Type I.13, Segmented. Silver. Akhziv, from Tomb N. 1 Phase 1, 10th-9th c. (after Mazar 2004: fig.22: 59).
29.	Bead, Metal Type I.14, Short Truncated Bicone. Gold. Lachish, from Cave dwelling 1535, Early Bronze II-III periods (after Tufnell 1958: pl. 29: 17).
30.	Bead, Metal Type I.14, Short Truncated Bicone. Gold. Lachish, Pit, 14th-13th c. (after Tufnell 1958: pl. 29: 11).
31.	Bead, Metal Type I.15, Short Truncated Convex Bicone (lentoid-shaped). Gold. Tell el-Farʿah (S), from Tomb 201, 10th-8th c. (after Starkey 1930: Type L: 40).

Figure 28
(Scale – 1: 1)

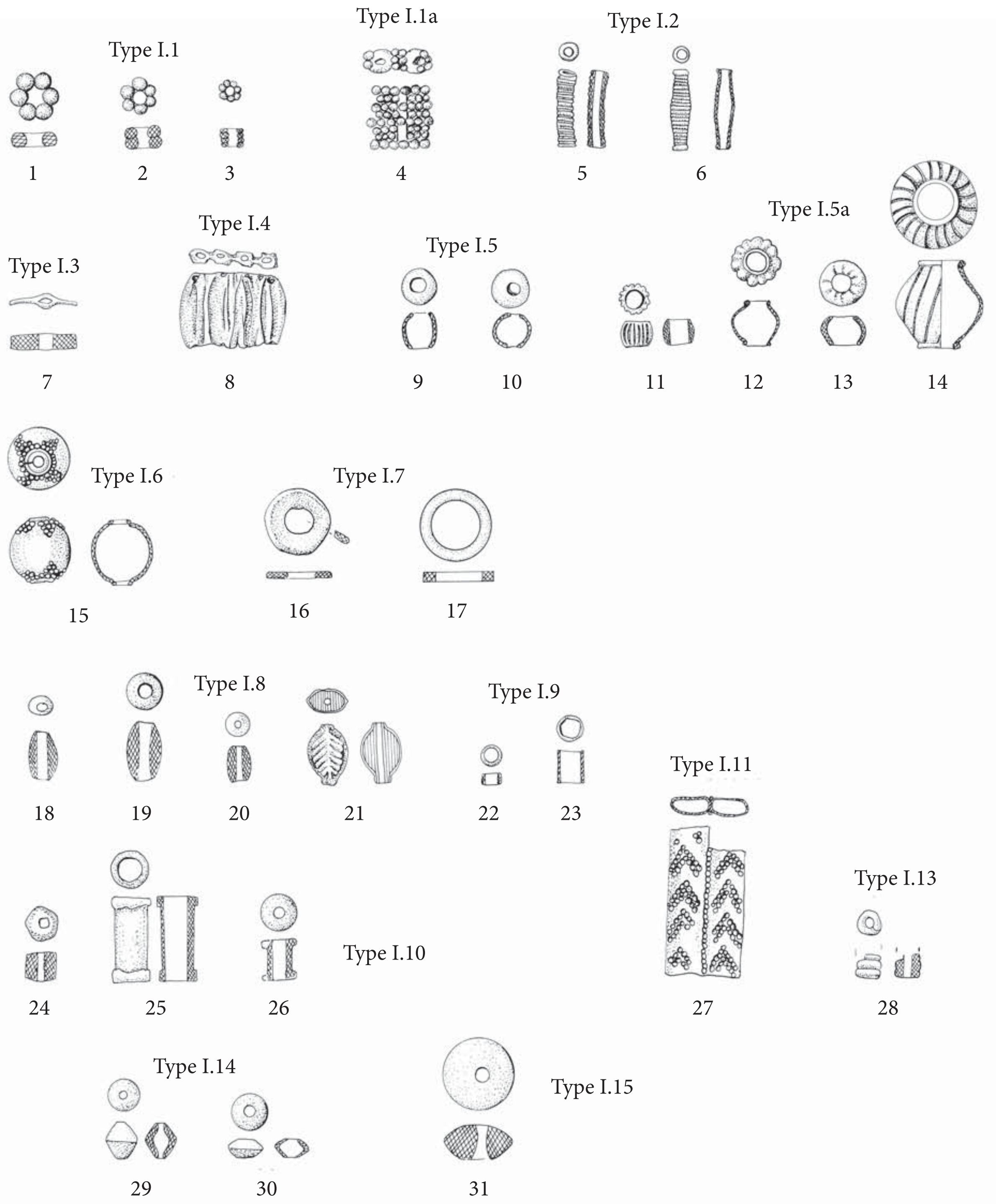


Figure 29 – Stone Beads
Types II.1, II.2, II.3, II.4, II.5, II.6, II.6a, II.7, II.8, II.9, II.10, II.11

1.	Bead, Stone Type II.1, Standard Circular. Carnelian. Tel Miqne-Ekron, from Strata IV-IC, 11th-7th c. (after Golani 1996a: fig. 17: 1).
2.	Bead, Stone Type II.1, Standard Circular. Hematite. Tel Ashdod, from Stratum XIIb, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 1).
3.	Bead, Stone Type II.2, Short Oblate Circular. Agate. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
4.	Bead, Stone Type II.2, Short Oblate Circular. White quartz. Tel Miqne-Ekron, from Stratum VIB, 12th c. (after Golani forthcoming A).
5.	Bead, Stone Type II.2, Short Oblate Circular. Agate? Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
6.	Bead, Stone Type II.2, Short Oblate Circular. Hematite. Tel Ashdod, from Stratum XIIa, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 2).
7.	Bead, Stone Type II.2, Short Oblate Circular. Carnelian. Tel Miqne-Ekron, from Strata VI-V, 12th-11th c. (after Golani 1996a: fig. 17: 2).
8.	Bead, Stone Type II.3, Short Convex Bicone (lentoid-shaped). Amethyst, Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 28).
9.	Bead, Stone Type II.3, Short Convex Bicone (lentoid-shaped). Agate. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani 1996a: fig. 17: 3).
10.	Bead, Stone Type II.3, Short Convex Bicone (lentoid-shaped). Carnelian. Kh. Abu Musarraḥ, from Dwelling and Burial cave, 12th-6th c. (after Golani 2004b: pl. 14: 7).
11.	Bead, Stone Type II.4, Short Truncated Bicone. Yellow jasper. Tell Beit Mirsim, from Tomb 100, 14th c. (after Golani 2004a: fig. 4.2: 3).
12.	Bead, Stone Type II.4, Short Truncated Bicone. Carnelian. Tel Miqne-Ekron, from Stratum VI, 12th c. (after Golani forthcoming A).
13.	Bead, Stone Type II.4, Short Truncated Bicone. Agate. Tel Migne-Ekron, from Stratum IB hoard, 7th c. (after Golani 1996a: fig. 17: 4).
14.	Bead, Stone Type II.4, Short Truncated Bicone. Limestone. Tel Ashdod, from Stratum XII, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 3).
15.	Bead, Stone Type II.5, Long Barrel. Carnelian. Kh. Abu Musarraḥ, from Dwelling and Burial cave, 12th-6th c. (after Golani 2004b: pl. 14: 8).
16.	Bead, Stone Type II.5, Long Barrel. Amethyst. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 47).
17.	Bead, Stone Type II.5, Long Barrel. Carnelian. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 19).
18.	Bead, Stone Type II.6, Long Truncated Convex Bicone. Carnelian. Tell Beit Mirsim, from Tomb 24, 18th-16th c. (after Golani 2004a: fig. 4.2: 4).
19.	Bead, Stone Type II.6, Long Truncated Convex Bicone. Red jasper? Tel Miqne-Ekron, from Stratum VI, 12th c. (after Golani 1996a: fig. 17: 6).
20.	Bead, Stone Type II.6, Long Truncated Convex Bicone. Alabaster or calcite. Tel Ashdod, from Strata IX-VIII, 9th-8th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 5).
21.	Bead, Stone Type II.6, Long Truncated Convex Bicone. Agate. Tel Miqne-Ekron, no clear context (after Golani forthcoming A).
22.	Bead, Stone Type II.6a, Long Truncated Convex Bicone (flattened or faceted). Carnelian. Azor, from Burial D 36, 11th c. (after Golani 2012: fig. 6.1: 4).
23.	Bead, Stone Type II.7, Long Truncated Bicone. Carnelian. Tell el-Farʿah (S), from Tomb 233, 10th-8th c. (after Starkey 1930:Type H: 20).
24.	Bead, Stone Type II.7, Long Truncated Bicone. Carnelian. Kh. Abu Musarraḥ, from Dwelling and Burial cave, 12th-6th c. (after Golani 2004b: pl. 14: 9).
25.	Bead, Stone Type II.7, Long Truncated Bicone. Carnelian. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 17: 7).
26.	Bead, Stone Type II.8, Long Truncated Convex Cone. Yellow jasper? Tel Miqne-Ekron, from Stratum V, 11th c. (after Golani 1996a: fig. 17: 8).
27.	Bead, Stone Type II.8, Long Truncated Convex Cone. Carnelian. Tel Miqne-Ekron, no clear context (after Golani forthcoming A).
28.	Bead, Stone Type II.9, Disk Cylinder. Carnelian. Qiryat Ata, from Stratum I, 29th-28th c. (after Golani 2003b: fig. 7.11: 2).
29.	Bead, Stone Type II.9, Disk Cylinder. Agate. Tel Miqne-Ekron, from Stratum VII, 12th c. (after Golani 1996a: fig. 17: 9).
30.	Bead, Stone Type II.10, Cylindrical. Carnelian. Tel Miqne-Ekron, from Stratum VI, 12th c. (after Golani 1996a: fig. 17: 10).
31.	Bead, Stone Type II.10, Cylindrical. Carnelian. Kh. Abu Musarraḥ, from Dwelling and Burial cave, 12th-6th c. (after Golani 2004b: pl. 14: 10).
32.	Bead, Stone Type II.10, Cylindrical. Limestone? Azor, from Burial D 79B, 11th c. (after Golani 2012: fig. 6.1: 7).
33.	Bead, Stone Type II.11, Tabular Disk. Malachite. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 67: 118).
34.	Bead, Stone Type II.11, Tabular Disk. Carnelian. Azor, from Burial D 55a, 8th c. (after Golani 2012: fig. 6.1: 8).
35.	Bead, Stone Type II.11, Tabular Disk. Brown and white agate. Lachish, from Solar Shrine, 4th c. (after Tufnell 1953: pl. 67: 119).
36.	Bead, Stone Type II.11, Tabular Disk. Brown and white agate. Lachish, from Solar Shrine, 4th c. (after Tufnell 1953: pl. 67: 120).

Figure 29
(Scale – 1: 1)

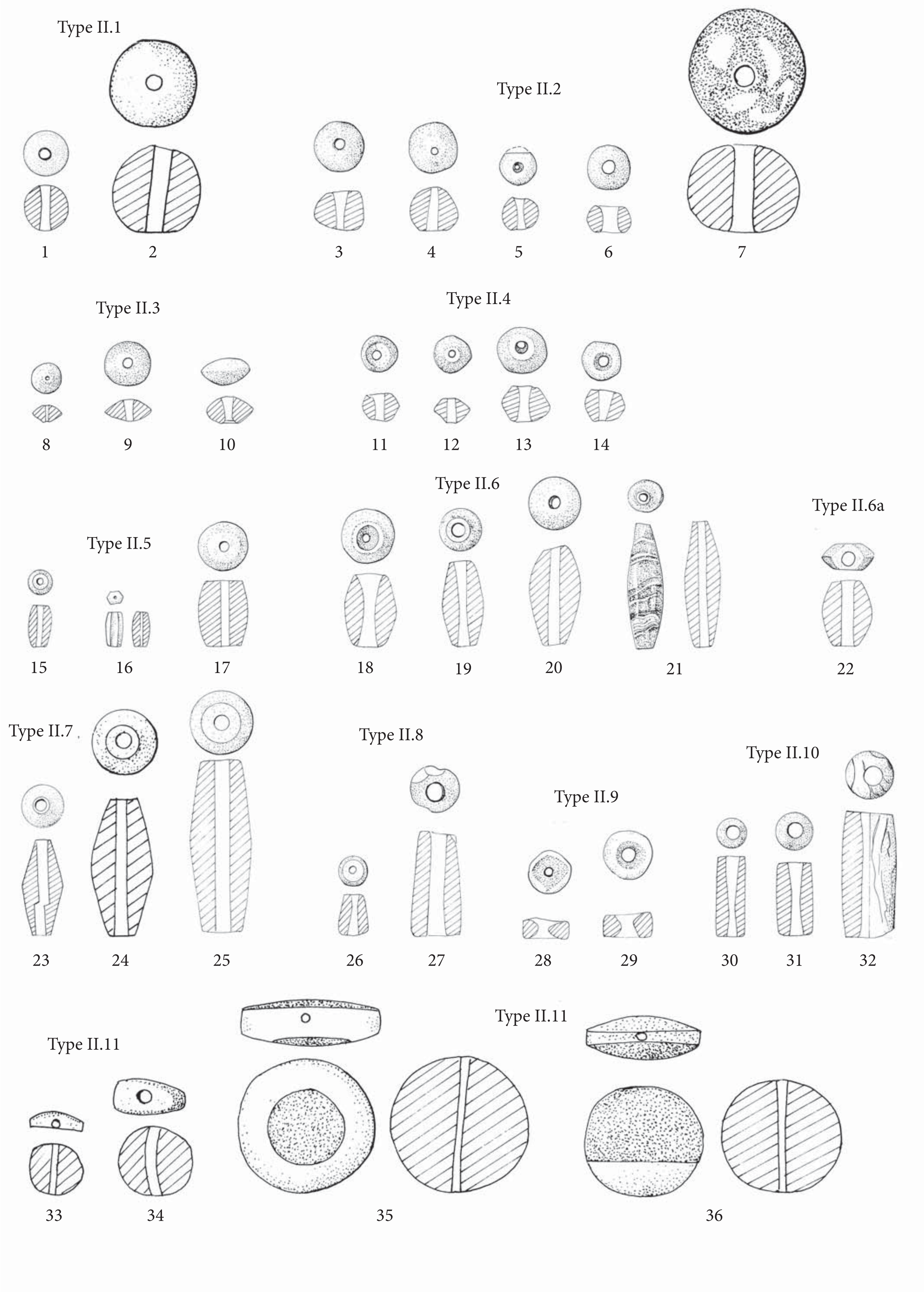


Figure 30 – Stone Beads
Types II.12, II.13, II.14, II.15a, II.16a-e, II.17, II.18, II.19, II.20, II.21, II.22

1.	Bead, Stone Type II.12, Scaraboid. Limestone. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 17: 12).
2.	Bead, Stone Type II.12, Scaraboid. Carnelian. Tel Michal, from Cist Tomb 2007, 6th-4th c. (after Herzog and Levy 1999: fig. 4: 5).
3.	Bead, Stone Type II.13, Cubical. Lapis lazuli. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 22: 27).
4.	Bead, Stone Type II.14, Cylindrical Ribbed. Green stone. Et-Taiyiba, from Cave Tomb N. 6, 11th-10th c. (after Yannai 2002: fig. 12: 9).
5.	Bead, Stone Type II.14, Cylindrical Ribbed. Gray stone. Tell el Far'ah(N), from Stratum VIIb, 11th-10th c. (after Chambon 1984: pl. 74: 9).
6.	Bead, Stone Type II.15a, Flattened Multi-Tubular Spacer. Carnelian. Lachish, from Tomb 218, 10th-9th c. (after Tufnell 1953: pl. 67: 112).
7.	Bead, Stone Type II.15a, Flattened Multi-Tubular Spacer. Carnelian. Tell el-Farʻah (S), from Tomb 213, 10th-8th c. (after Starkey 1930:Type Y: 12).
8.	Bead, Stone Type II.16a, Short Oblate Fluted Melon. Carnelian. Lachish, Level IVb, 9th c. (after Sass 2004: fig. 28.18: 11).
9.	Bead, Stone Type II.16b, Fluted Barrel-Shaped. Carnelian. Deir el-Balaḥ, from Tomb 116, 13th c. (after Dothan 1979:ill. 103).
10.	Bead, Stone Type II.16b, Fluted Barrel-Shaped. Gray stone. Akhziv, from Tomb T.C. 4, 11th-10th c. (after Mazar 2001: fig. 18: 11).
11.	Bead, Stone Type II.16c, Fluted Lentoid. Gray limestone. Lachish, from Burial Cave 4002, 20th-9th c. (after Tufnell 1953: pl. 66: 62).
12.	Bead, Stone Type II.16d, Fluted Bicone. Gray limestone. Lachish, from Tomb 218, 10th-9th c. (after Tufnell 1953: pl. 66: 73).
13.	Bead, Stone Type II.16e, Short Oblate Spiral Melon with Collars. Brown limestone. Lachish, from Solar Shrine, 4th c. (after Tufnell 1953: pl. 67: 122).
14.	Bead, Stone Type II.17, Elongated Square – Rectangular. Carnelian. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 27).
15.	Bead, Stone Type II.17, Elongated Square – Rectangular. Black stone. Ashdod, from Stratum XIII, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 7).
16.	Bead, Stone Type II.17, Elongated Square – Rectangular. Metamorphic stone. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 22: 24).
17.	Bead, Stone Type II.18, Flat Disk. Carnelian. Azor, from Burial D 30, 10th-9th c. .
18.	Bead, Stone Type II.18, Flat Disk. Carnelian. Azor, from Burial D 30, 10th-9th c. (after Golani 2012: fig. 6.1: 9).
19.	Bead, Stone Type II.19, Elongated 'Pear'-Shaped. Microline. Lachish, from Burial Cave 1552, 18th-17th c. (after Tufnell 1958: pl. 29: 24).
20.	Bead, Stone Type II.19, Elongated 'Pear'-Shaped. Lapis lazuli. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 22: 54).
21.	Bead, Stone Type II.19, Elongated 'Pear'-Shaped. Agate. Tel Miqne-Ekron, from Stratum VC, 11th c. (after Golani forthcoming A).
22.	Bead, Stone Type II.20, Plano-Convex. Diorite. Tell el-Farʻah (S), from Tomb 201, 10th-8th c. (after Starkey 1930: Type S: 30).
23.	Bead, Stone Type II.21, 'Reel'-Shaped. Red jasper. Tell el-Farʻah (S), from Tomb 212, 10th-8th c. (after Starkey 1930: Type P: 60).
24.	Bead, Stone Type II.22, 'Doughnut'-Shaped. Carnelian. Tell el-Farʻah (S), from Tomb 201, 10th-8th c. (after Starkey 1930: Type N: 119).

Figure 30
(Scale – 1: 1)

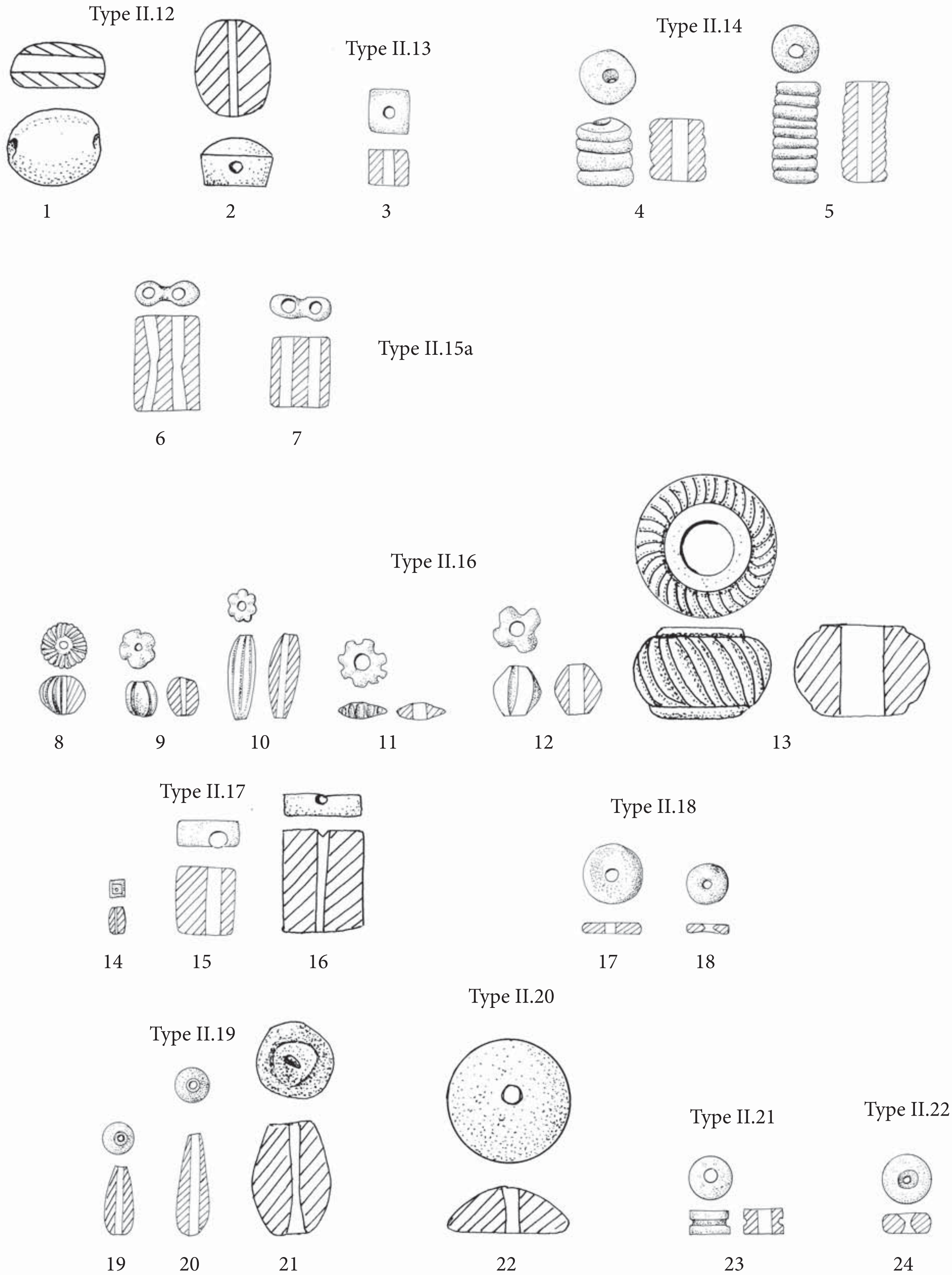


Figure 31 – Siliceous Beads, Types III.1, III.2, III.3a-b, III.4, III.5, III.6a-b, III.7, III.8, III.9a, III.10, III.11

1.	Bead, Siliceous Type III.1, Small Flat Disk. Faience. Tel Miqne-Ekron, from Stratum IXD, 15th-14th c. (after Golani forthcoming A).
2.	Bead, Siliceous Type III.1, Small Flat Disk. Faience. Tel Miqne-Ekron, from Stratum VIB, 12th c. (after Golani forthcoming A).
3.	Bead, Siliceous Type III.1, Small Flat Disk. Faience. Tel Miqne-Ekron, from Stratum IVB, 11th-10th c. (after Golani forthcoming A).
4.	Bead, Siliceous Type III.1, Small Flat Disk. Faience. Tel Miqne-Ekron, from Strata VI-V, 12th-11th c. (after Golani 1996a: fig. 18: 1).
5.	Bead, Siliceous Type III.2, Short Oblate Circular. Egyptian Blue. Tel Miqne-Ekron, from Stratum VIA, 12th c. (after Golani forthcoming A).
6.	Bead, Siliceous Type III.2, Short Oblate Circular. Glass. Tel Miqne-Ekron, from Stratum V, 11th c. (after Golani forthcoming A).
7.	Bead, Siliceous Type III.2, Short Oblate Circular. Glass. Tel Miqne-Ekron, from Stratum VIB, 12th c. (after Golani forthcoming A).
8.	Bead, Siliceous Type III.2, Short Oblate Circular. Glass. Tel Ashdod, Unstratified (after Golani and Ben-Shlomo 2005: fig. 4.2: 12).
9.	Bead, Siliceous Type III.3a, Short Truncated Bicone. Faience. Tel Miqne-Ekron, from Stratum VII, 12th c. (after Golani 1996a: fig. 18: 3).
10.	Bead, Siliceous Type III.3a, Short Truncated Bicone. Faience. Tell el-Farʽah (S), from Tomb 213, 10th-8th c. (after Starkey 1930: Type L: 8).
11.	Bead, Siliceous Type III.3b, Short Truncated Convex Bicone (lentoid). Faience. Tell el-Farʽah (S), from Tomb 859, 17th-16th c. (after Starkey 1930: Type L: 80).
12.	Bead, Siliceous Type III.3b, Short Truncated Convex Bicone (lentoid). Faience. Tell el-Farʽah (S), from Tomb 763, 12th-11th c. (after Starkey 1930: Type L: 29).
13.	Bead, Siliceous Type III.4, Long Truncated Convex Bicone. Glass. Tel Miqne-Ekron, from Stratum IVA, 11th-10th c. (after Golani 1996a: fig. 18: 2).
14.	Bead, Siliceous Type III.4, Long Truncated Convex Bicone. Glass. Tel Miqne-Ekron, from Stratum IXD, 15th-14th c. (after Golani forthcoming A).
15.	Bead, Siliceous Type III.4, Long Truncated Convex Bicone. Faience. Tel Miqne-Ekron, from Stratum IA, 6th c. (after Golani forthcoming A).
16.	Bead, Siliceous Type III.4, Long Truncated Convex Bicone. Glass. Tel Miqne-Ekron, from Stratum VIA, 12th c. (after Golani forthcoming A).
17.	Bead, Siliceous Type III.4, Long Truncated Convex Bicone. Glass. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 18: 4).
18.	Bead, Siliceous Type III.5, Thin Long Cylinder. Faience. Tel Miqne-Ekron, from Stratum VII, 12th c. (after Golani 1996a: fig. 18: 5).
19.	Bead, Siliceous Type III.5, Thin Long Cylinder. Faience. Tel Ashdod, from Stratum XIIb, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 15).
20.	Bead, Siliceous Type III.6a, Long Thick Cylinder with Spiral Decoration – Glass. Glass. Tel Miqne-Ekron, no context (after Golani 1996a: fig. 18: 6).
21.	Bead, Siliceous Type III.6a, Long Thick Cylinder with Spiral Decoration – Glass. Glass. Azor, from Burial D 79B, 11th c. (after Golani 2012: fig. 6.1: 15).
22.	Bead, Siliceous Type III.6a, Long Thick Cylinder with Spiral Decoration – Glass. Glass. Tel Miqne-Ekron, from Stratum II, 8th c. (after Golani forthcoming A).
23.	Bead, Siliceous Type III.6b, Long Thick Cylinder – Faience. Faience. Lachish, from Tomb 106, 7th-6th c. (after Tufnell 1953: pl. 66: 33).
24.	Bead, Siliceous Type III.6b, Long Thick Cylinder – Faience. Faience. Lachish, from Tomb 218, 10th-9th c. (after Tufnell 1953: pl. 66: 37).
25.	Bead, Siliceous Type III.6b, Long Thick Cylinder – Faience. Faience. Tell Beit Mirsim, from Tomb 33, 18th-16th c. (after Golani 2004a: fig. 4.2: 14).
26.	Bead, Siliceous Type III.7, Segmented. Faience. Azor, from Burial D 79B, 11th c. (after Golani 2012: fig. 6.1: 16).
27.	Bead, Siliceous Type III.7, Segmented. Faience. Tel Miqne-Ekron, from Stratum IVA, 11th-10th c. (after Golani forthcoming A).
28.	Bead, Siliceous Type III.7, Segmented. Faience. Tel Miqne-Ekron, from Stratum IV, 11th-10th c. (after Golani 1996a: fig. 18: 7).
29.	Bead, Siliceous Type III.7, Segmented. Egyptian Blue. Tel Miqne-Ekron, from Stratum IVB, 11th-10th c. (after Golani forthcoming A).
30.	Bead, Siliceous Type III.7, Segmented. Faience. Tell Beit Mirsim, from Tomb 1, 14th-8th c. (after Golani 2004a: fig. 4.2: 15).
31.	Bead, Siliceous Type III.8, Granulated Bead. Egyptian Blue. Lachish, from Tomb 218, 10th-9th c. (after Tufnell 1953: pl. 66: 42).
32.	Bead, Siliceous Type III.8, Granulated Bead. Faience. Lachish, from Tomb 218, 10th-9th c. (after Tufnell 1953: pl. 66: 43).
33.	Bead, Siliceous Type III.8, Granulated Bead. Faience. Tel Miqne-Ekron, from Stratum II, 8th c. (after Golani 1996a: fig. 18: 8).
34.	Bead, Siliceous Type III.8, Granulated Bead. Faience. Tell el-Farʽah (S), from Tomb 119, from unclear date (after Starkey 1930: Type K: 5).
35.	Bead, Siliceous Type III.9a, Flattened Multi-Tubular Spacer. Faience. Tel Miqne-Ekron, from Stratum VC, 11th c. (after Golani 1996a: fig. 18: 9).
36.	Bead, Siliceous Type III.9a, Flattened Multi-Tubular Spacer. Faience. Tel Ashdod, Unstratified (after Golani and Ben-Shlomo 2005: fig. 4.2: 19).
37.	Bead, Siliceous Type III.9a, Flattened Multi-Tubular Spacer. Faience. Tell Beit Mirsim, from Tomb 100, 14th c. (after Golani 2004a: fig. 4.2: 16).
38.	Bead, Siliceous Type III.10, Scaraboid. Faience. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani 1996a: fig. 18: 10).
39.	Bead, Siliceous Type III.10, Scaraboid. Faience. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
40.	Bead, Siliceous Type III.11, Lotus. Glass? Kamid el-Loz, from Grave 18, 5th-4th c. (after Poppa 1978: pl. 13: 8).
41.	Bead, Siliceous Type III.11, Lotus. Egyptian Blue. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 18: 11).

Figure 31
(Scale 1: 1)

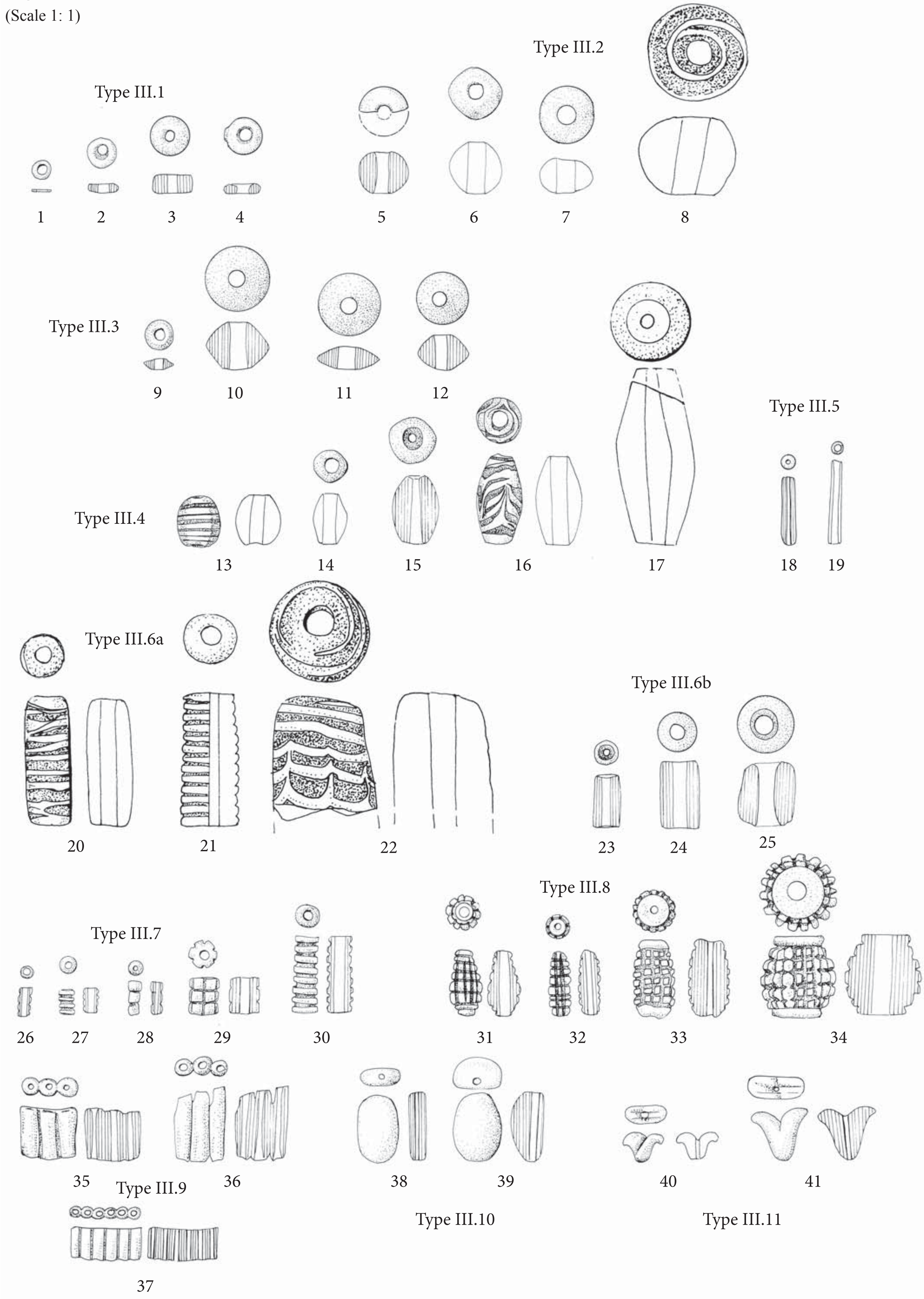


Figure 32 – Siliceous Beads, Types III.12a-b, III.12d, III.13, III.14, III.15, III.16a-f

1.	Bead, Siliceous Type III.12a, Standard Tabular ‘Eye’. Glass. Tell el-Farʻah (S), from Tomb 201, 10^{th}-8^{th} c. (after Starkey 1930:Type S: 62).
2.	Bead, Siliceous Type III.12a, Standard Tabular ‘Eye’. Glass. Tel Miqne-Ekron, from Stratum VII, 12^{th} c. (after Golani 1996a: fig. 18: 12).
3.	Bead, Siliceous Type III.12a, Standard Tabular ‘Eye’. Glass. Tel Ashdod, from Stratum XIb, 11^{th} c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 21).
4.	Bead, Siliceous Type III.12b, Triangular Horned Stratified ‘Eye’. Glass. Jerusalem, City of David, from Stratum 10b, 7^{th}-6^{th} c. (after Ariel 1990: 157-158, fig. 31:GL45).
5.	Bead, Siliceous Type III.12b Triangular Horned Stratified ‘Eye’. Glass. Jerusalem, City of David, from Stratum 10b, 7^{th}-6^{th} c. (after Ariel 1990: 157-158, fig. 31:GL44).
6.	Bead, Siliceous Type III.12b, Triangular Horned Stratified ‘Eye’. Glass. Tel Miqne-Ekron, from Stratum IB, 7^{th} c. (after Golani 1996a: fig. 18: 13).
7.	Bead, Siliceous Type III.12b Triangular Horned Stratified ‘Eye’. Glass. Gezer, from unclear context, Fourth Semitic Period (after Macalister 1912c: pl. 137b: 50).
8.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Kamid el-Loz, from Grave 10, 6^{th}-4^{th} c. (after Hachmann and Penner 1999: pl. 36: 3).
9.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Lachish, from Level V, 10^{th}-9^{th} c. (after Tufnell 1953: pl. 66: 75).
10.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Lachish, from Burial Cave 1002, 8^{th} c. (after Tufnell 1953: pl. 66: 78).
11.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Tell el-Farʻah (S), from Tomb 737, of unclear date (after Starkey 1930: Type P: 26).
12.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Tell el-Farʻah (S), from Tomb 720, of unclear date (after Starkey 1930: Type P: 23).
13.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Tell el-Farʻah (S), from Tomb 864, of unclear date (after Starkey 1930: Type P: 20).
14.	Bead, Siliceous Type III.12d, Short Oblate Globular ‘Eye’. Glass. Jerusalem, City of David, from Stratum V dumps, 1^{st} c. -1^{st} c. CE (after Ariel 1990: fig. 31:GL56).
15.	Bead, Siliceous Type III.13, Tabular Disk. Glass. Azor, from Burial D 60, 14^{th} -13^{th} c. (after Golani 2012: fig. 6.1: 17).
16.	Bead, Siliceous Type III.13, Tabular Disk. Glass. Tel Miqne-Ekron, from Stratum III, 10^{th}-9^{th} c. (after Golani forthcoming A).
17.	Bead, Siliceous Type III.13, Tabular Disk. Glass. Tel Miqne-Ekron, from Stratum III, 10^{th}-9^{th} c. (after Golani forthcoming A).
18.	Bead, Siliceous Type III.14, Short Hexagonal or Pentagonal. Glass. Tel Miqne-Ekron, from unclear context (after Golani forthcoming A).
19.	Bead, Siliceous Type III.15, Truncated Conical. Glass. Lachish, from Tomb 106, 7^{th}-6^{th} c. (after Tufnell 1953: pl. 66: 87).
20.	Bead, Siliceous Type III.15, Truncated Conical. Glass? Jerusalem, City of David, from Stratum V rubble, 1^{st} c. -1^{st} c. CE (after Ariel 1990: fig. 31:GL59).
21.	Bead, Siliceous Type III.16a, Short Oblate Fluted ‘Melon’. Faience. Azor, from Burial D 35, 10^{th}-9^{th} c. (after Golani 2012: fig. 6.1: 19).
22.	Bead, Siliceous Type III.16a, Short Oblate Fluted ‘Melon’. Faience. Tell Beit Mirsim, from Tomb 510, 18^{th}-14^{th} c. (after Golani 2004a: fig. 4.2: 18).
23.	Bead, Siliceous Type III.16a, Short Oblate Fluted ‘Melon’. Faience. Azor, from Burial D 15, 11^{th} c. (after Golani 2012: fig. 6.1: 18).
24.	Bead, Siliceous Type III.16a1, Short Oblate Fluted ‘Melon’ with Collars. Faience. Tell Beit Mirsim, from Tomb 510, 18^{th}-14^{th} c. (after Golani 2004a: fig. 4.2: 19).
25.	Bead, Siliceous Type III.16a1, Short Oblate Fluted ‘Melon’ with Collars. Faience. Tell el-Farʻah (S), from Tomb 811, from unclear date (after Starkey 1930: Type K: 26).
26.	Bead, Siliceous Type III.16a1, Short Oblate Fluted ‘Melon’ with Collars. Faience. Lachish, from Burial Cave 4004, 16^{th}-14^{th} c. (after Tufnell 1958: pl. 29: 38).
27.	Bead, Siliceous Type III.16a1, Short Oblate Fluted ‘Melon’ with Collars. Egyptian Blue. Azor, from unclear context (after Golani 2012: fig. 6.1: 20).
28.	Bead, Siliceous Type III.16b, Elongated Fluted ‘Melon’. Faience. Tell Beit Mirsim, from Tomb 100, 14^{th} c. (after Golani 2004a: fig. 4.2: 20).
29.	Bead, Siliceous Type III.16b, Elongated Fluted ‘Melon’. Faience. Lachish, from Level IVb, 9^{th} c. (after Sass 2004: fig. 28.18: 14).
30.	Bead, Siliceous Type III.16c, Fluted Cylinder. Faience. Lachish, from Burial Cave 4004, 16^{th}-14^{th} c. (after Tufnell 1958: pl. 29: 40).
31.	Bead, Siliceous Type III.16c, Fluted Cylinder. Faience. Lachish, from Tomb 218, 10^{th}-9^{th} c. (after Tufnell 1953: pl. 66: 74).
32.	Bead, Siliceous Type III.16d, Fluted Round Plano-Convex. Faience. Tel Miqne-Ekron, from Stratum IX, 15^{th}-14^{th} c. (after Golani forthcoming A).
33.	Bead, Siliceous Type III.16e, Fluted Disk. Faience. Tel Ashdod, from Stratum XII, 12^{th} c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 22).
34.	Bead, Siliceous Type III.16e, Fluted Disk. Faience. Tel Ashdod, from Stratum XIIb, 12^{th} c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 23).
35.	Bead, Siliceous Type III.16e1, Fluted Disk with Collars. Faience. Tell Beit Mirsim, from Tomb 500, 14^{th}-8^{th} c. (after Golani 2004a: fig. 4.2: 21).
36.	Bead, Siliceous Type III.16f, Fluted Bicone. Faience. Tel Miqne-Ekron, from Stratum IB, 7^{th} c. (after Golani forthcoming A).

Figure 32 (Scale – 1: 1)

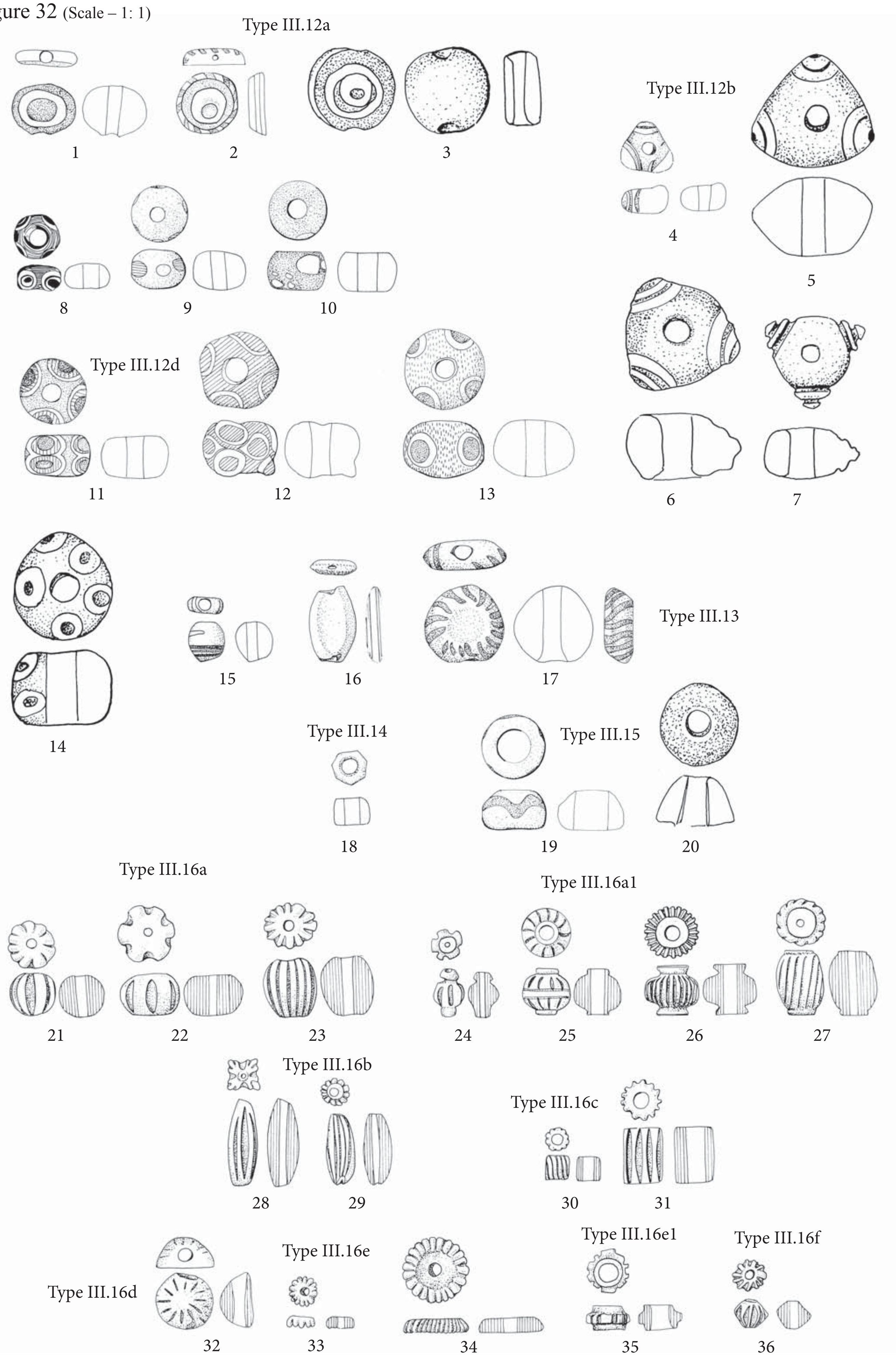


Figure 33 – Siliceous Beads
Types III.17, III.19, III.20, III.21, III.24;
Terracotta Beads
Types IV.1, IV.3, IV.4), IV.7

1.	Bead, Siliceous Type III.17, Amphora-Shaped. Glass. Akhziv, from Tomb ZR VI, 8th-6th c. (after Dayagi-Mendels 2002: fig. 4.5: 10).
2.	Bead, Siliceous Type III.19, Cubical. Egyptian Blue. Mitzpeh Apheq, from ground surface, unclear date (after Golani forthcoming B).
3.	Bead, Siliceous Type III.19, Cubical. Glass. Lachish, from Burial Cave 4005, 10th-6th c. (after Tufnell 1953: pl. 66: 9).
4.	Bead, Siliceous Type III.20, Rectangular. Faience? Lachish, from Tomb 116, 9th-6th c. (after Tufnell 1953: pl. 66: 36).
5.	Bead, Siliceous Type III.21, 'Pear'-Shaped. Faience. Tel Michal, from Jar Burial 2002, 6th-4th c. (after Herzog and Levy 1999: fig. 10: 4).
6.	Bead, Siliceous Type III.21, 'Pear'-Shaped. Egyptian Blue. Akhziv, from Tomb N. 1 Phase 1, 10th-9th c. (after Mazar 2004: fig. 22: 9).
7.	Bead, Siliceous Type III.24, Elongated Triangular. Faience. Azor, from Burial D 30, 10th-9th c. (after Golani 2012: fig. 6.1: 23).
8.	Bead, Siliceous Type III.24, Elongated Triangular. Faience? Tell el-Far'ah (S), from Tomb 960, 12th-11th c. (after Starkey and Harding 1932: pl. 72: Type C: 25).
9.	Bead, Terracotta Type IV.1, Long Truncated Convex Bicone. Terracotta. Lachish, from Level III or earlier, 8th c. or earlier (after Tufnell 1953: pl. 66: 22).
10.	Bead, Terracotta Type IV.1, Long Truncated Convex Bicone. Terracotta. Tell el-Farʽah (S), from Tomb 206, 12th-11th c. (after Starkey 1930: Type D: 36).
11.	Bead, Terracotta Type IV.1 Long Truncated Convex Bicone. Terracotta. Tel Miqne-Ekron, from Stratum V, 11th c. (after Golani 1996a: fig. 19: 1).
12.	Bead, Terracotta Type IV.3, Cylindrical. Terracotta. Akhziv, from Tomb N. 1 Phase 3, 9th-7th c. (after Mazar 2004: fig. 22: 23).
13.	Bead, Terracotta Type IV.3, Cylindrical. Terracotta. Tel Michal, from Cist Tomb 2009, 6th-4th c. (after Herzog and Levy 1999: fig. 8: 23).
14.	Bead, Terracotta Type IV.4, Short Oblate Globular. Terracotta. Tell el-Far'ah (S), from Tomb 241, 10th-8th c. (after Starkey 1930: Type N: 85).
15.	Bead, Terracotta Type IV.4, Short Oblate Globular. Terracotta. Gezer, from unclear context (after Macalister 1912c: pl. 137b: 66).
16.	Bead, Terracotta Type IV.7, Truncated Biconical. Terracotta. Gezer, from unclear context (after Macalister 1912c: pl. 137b: 67).
17.	Bead, Terracotta Type IV.7, Truncated Biconical. Terracotta. Gezer, from unclear context (after Macalister 1912c: pl. 137b: 68).
18.	Bead, Terracotta Type IV.7, Truncated Biconical. Terracotta. Gezer, from unclear context (after Macalister 1912c: pl. 137b: 69).

Figure 33
(Scale – 1: 1)

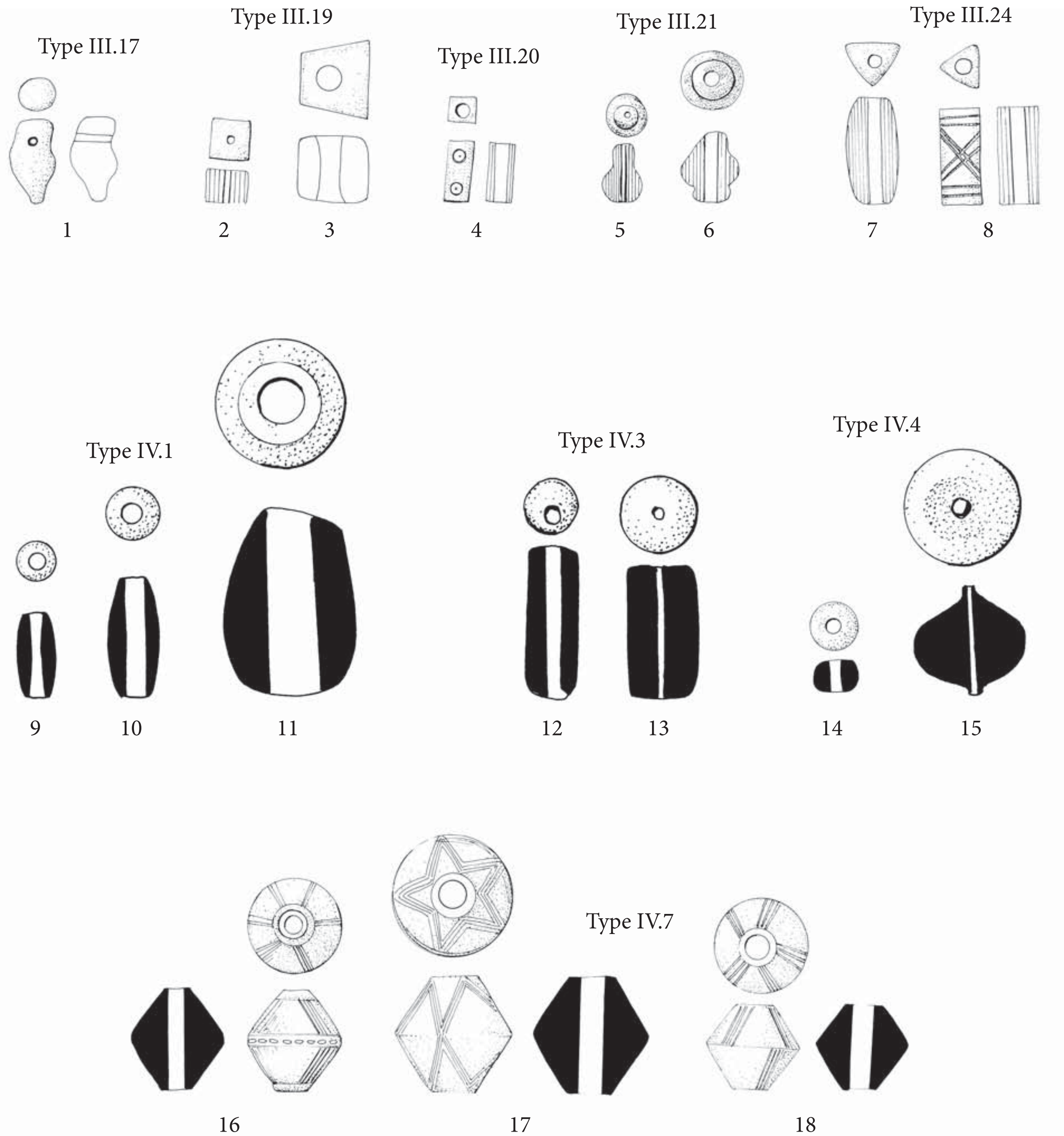


Figure 34 – Bone/Ivory Beads
Types V.1, V.2, V.3, V.4, V.5, V.6, V.7, V.10, V.11, V.12

1.	Bead, Bone/Ivory Type V.1, Elongated Spacer. Bone. Tel Miqne-Ekron, from Stratum VIB or earlier, 12th c. or earlier (after Golani forthcoming A).
2.	Bead, Bone/Ivory Type V.1, Elongated Spacer. Bone. Tel Miqne-Ekron, from Stratum V, 11th c. (after Golani 1996a: fig. 19: 2).
3.	Bead, Bone/Ivory Type V.2, Rectangular Spacer. Bone. Tel Miqne-Ekron, from Stratum IVA-B, 11th-10th c. (after Golani 1996a: fig. 19: 3).
4.	Bead, Bone/Ivory Type V.2, Rectangular Spacer. Bone. Tell Beit Mirsim, from Tomb 500, 14th-8th c. (after Golani 2004a: fig. 4.3: 1).
5.	Bead, Bone/Ivory Type V.3, Cylindrical. Bone. Tell Beit Mirsim, from Tomb 500, 14th-8th c. (after Golani 2004a: fig. 4.3: 2).
6.	Bead, Bone/Ivory Type V.3, Cylindrical. Bone. Tel Miqne-Ekron, from Stratum IVB-C, 11th-10th c. (after Golani forthcoming A).
7.	Bead, Bone/Ivory Type V.3, Cylindrical. Bone. Tel Miqne-Ekron, from unclear context (after Golani forthcoming A).
8.	Bead, Bone/Ivory Type V.3, Cylindrical. Bone. Tel Miqne-Ekron, from Stratum VC, 11th c. (after Golani forthcoming A).
9.	Bead, Bone/Ivory Type V.4, Plano-Convex. Bone. Tel Ashdod, from Stratum XXIIa, 16th c. (after Dothan and Porath 1993: fig. 3: 16).
10.	Bead, Bone/Ivory Type V.4, Plano-Convex. Bone. Tel Miqne-Ekron, from unclear context (after Golani forthcoming A).
11.	Bead, Bone/Ivory Type V.4, Plano-Convex. Bone. Tel Ashdod, from Stratum XXIIa, 16th c. (after Dothan and Porath 1993: fig. 3: 17).
12.	Bead, Bone/Ivory Type V.5, Lentoid. Ivory. Tell el-Farʽah (S), from Tomb 201, 10th-8th c. (after Starkey 1930:Type L: 84).
13.	Bead, Bone/Ivory Type V.5, Lentoid. Ivory. Tel Miqne-Ekron, from Stratum IB-C, 7th c. (after Golani forthcoming A).
14.	Bead, Bone/Ivory Type V.6, Flat Disk. Bone. Tell Beit Mirsim, from Tomb 100, 14th c. (after Golani 2004a: fig. 4.3: 3).
15.	Bead, Bone/Ivory Type V.6, Flat Disk. Ivory. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani forthcoming A).
16.	Bead, Bone/Ivory Type V.6, Flat Disk. Bone. Tel Ashdod, from Stratum XXIIA, 16th c. (after Dothan and Porath 1993: fig. 3: 18).
17.	Bead, Bone/Ivory Type V.7, Long Truncated Convex Bicone. Bone. Lachish, from Tomb 224, 9th c. (after Tufnell 1953: fig. 66: 72).
18.	Bead, Bone/Ivory Type V.7, Long Truncated Convex Bicone. Bone. Tel Miqne-Ekron, from Stratum IVA, 11th-10th c. (after Golani forthcoming A).
19.	Bead, Bone/Ivory Type V.10, Cubical. Bone. Tell el-Farʽah (S), from Tomb 241, 10th-8th c. (after Starkey 1930: Type C: 50).
20.	Bead, Bone/Ivory Type V.11, Short Oblate Globular. Bone. Tell el-Farʽah (S), from Tomb 201, 10th-8th c. (after Starkey 1930: Type J: 20).
21.	Bead, Bone/Ivory Type V.12, Short Truncated Biconical. Ivory. Tell el-Farʽah (S), from Tomb 201, 10th-8th c. (after Starkey 1930: Type L: 17).

Figure 34
(Scale – 1: 1)

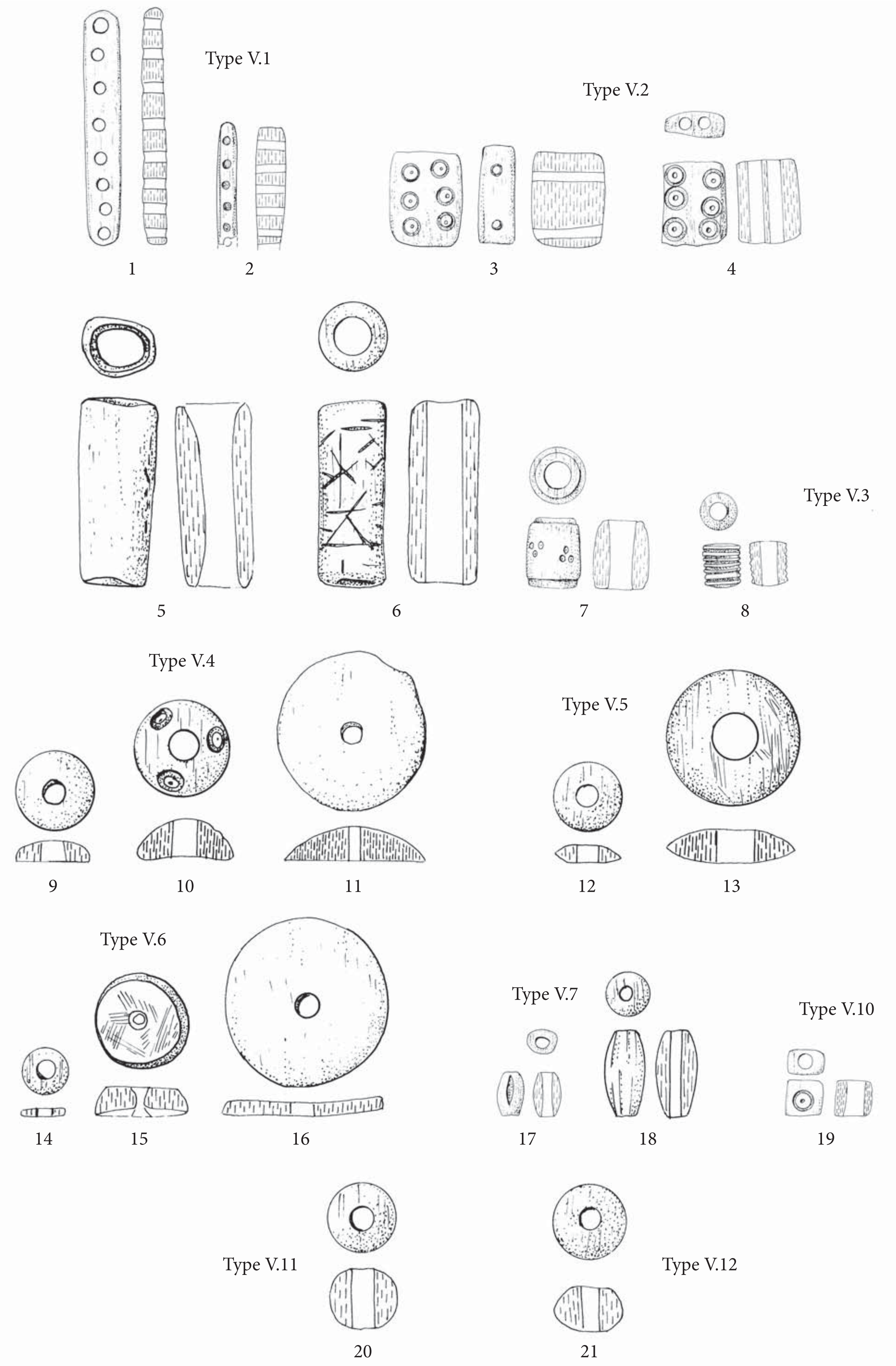
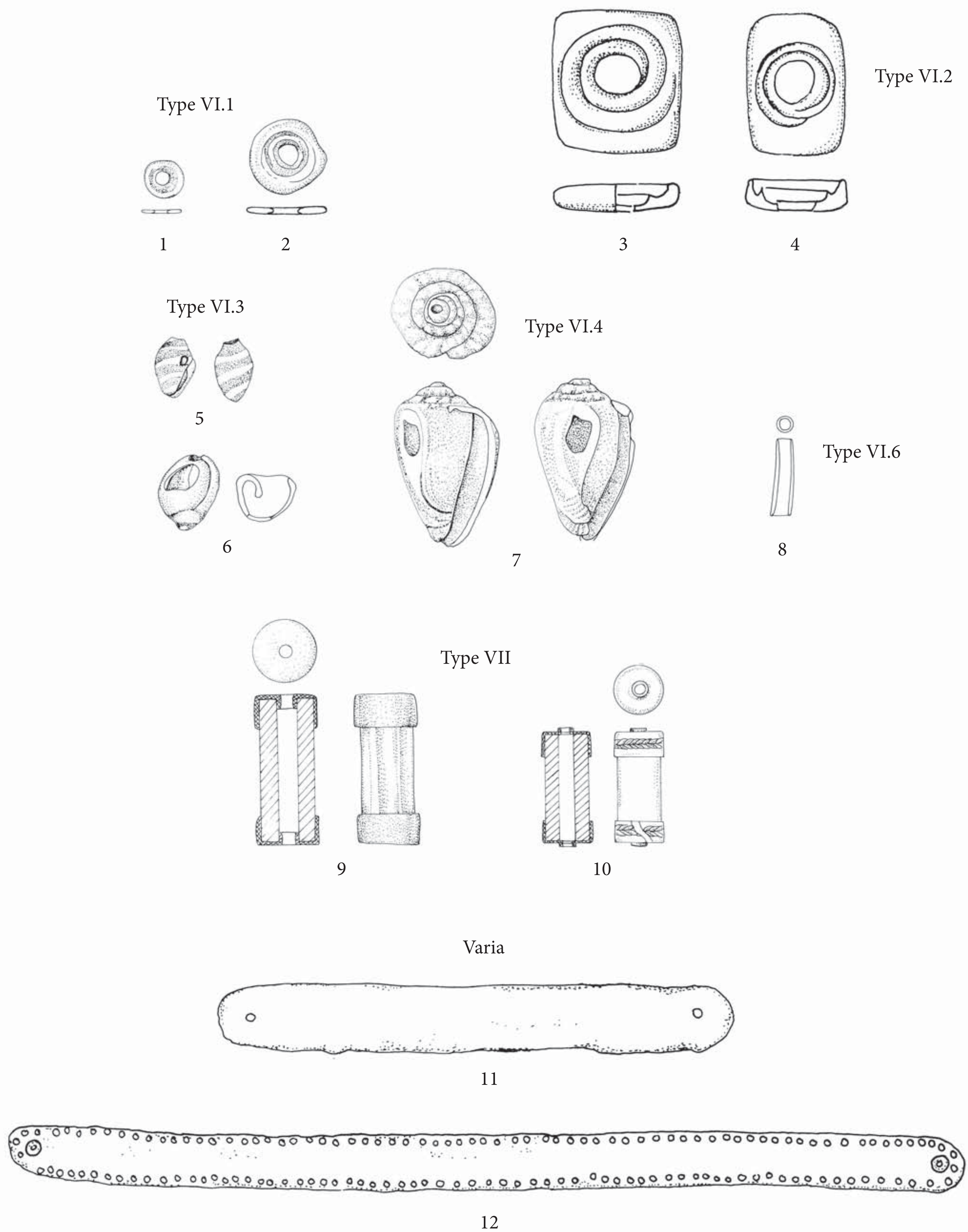


Figure 35 – Shell Beads
Types VI.1, VI.2, VI.3, VI.4, VI.6;
Composite Beads
Type VII;
Varia

1.	Bead, Shell Type VI.1, Flat Disk. Shell. Tel Miqne-Ekron, from Stratum VB, 11th c. (after Golani 1996a: fig. 19: 4).
2.	Bead, Shell Type VI.1, Fat Disk. Shell. Tell Beit Mirsim, from Tomb 500, 14th-8th c. (after Golani 2004a: fig. 4.3: 5).
3.	Bead, Shell Type VI.2, Square, Rectangular or Circular Conus Whorl. Shell. Azor, from Burial D 7, 11th c. (after Golani 2012: fig. 6.2: 2).
4.	Bead, Shell Type VI.2, Square, Rectangular or Circular Conus Whorl. Shell. Tel Ashdod, from unclear context (after Golani and Ben-Shlomo 2005: fig. 4.2: 25).
5.	Bead, Shell Type VI.3, Modified Shell. Shell. Tell Beit Mirsim, from Tomb 1, 14th-8th c. (Golani 2004a: fig. 4.3: 6).
6.	Bead, Shell Type VI.3, Modified Shell. Shell. Tel Miqne-Ekron, from Stratum IB, 7th c. (after Golani 1996a: fig. 19: 6).
7.	Bead, Shell Type VI.4, Ground Down Conus Shell. Shell. Tel Miqne-Ekron, from Stratum VA, 11th c. (after Golani forthcoming A).
8.	Bead, Shell Type VI.6, Dentalium. Shell. Tel Ashdod, from Stratum XIII, 12th c. (after Golani and Ben-Shlomo 2005: fig. 4.2: 27).
9.	Bead Type VII, Composite. Silver and rock crystal. Tel Miqne-Ekron, from Stratum IB hoard, 7th c. (after Golani forthcoming A).
10.	Bead Type VII, Composite. Gold and rock crystal. Akhziv, Tomb N. 1 Phase 1, 10th-9th c. (after Mazar 2004: fig. 22: 10).
11.	Varia, Headband or Mouthpiece. Gold. Tell el-Farʿah (S), from Tomb 201, 10th-8th c. (after Petrie 1930: pl. 40: 500).
12.	Varia, Headband or Mouthpiece. Gold. Tell el-Farʿah (S), from Tomb 201, 10th-8th c. (after Petrie 1930: pl. 40: 499).

Figure 35
(Scale – 1: 1)



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Summary

Jewelry has always had an irresistible allure yet in the past also had a significance and function within society that went far beyond ornamentation. Jewelry is an important, if often forgotten facet of material culture. Its study is inter-disciplinary, involving archaeology, anthropology, art history, historical/textual studies, and research of materials and manufacturing techniques. While the renowned jewelry from regions such as Egypt and Mesopotamia has been studied, that of the southern Levant has received only limited attention, yet research of its archaeological/contextual, technological and socio-cultural perspectives is illuminating.

The book is a final publication of the author's doctoral dissertation made available to the archaeological and academic community at large. It is geared to be a working tool for archaeologists dealing in this period and region and to scholars who study its arts and crafts. The book provides a handy typological structure for jewelry classification as well as a comprehensive andf useful catalogue for research in this and related fields. In addition, it illustrates the significance, meaning and functions of jewelry and the development of the jeweler's craft in the southern Levant during the first and second millennia BCE.